

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**



**NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION**

**Frederick E. Everett Turnpike (FEET) Corridor  
Advanced Transportation Management System  
(ATMS)**

**Project No. 29408**

**RFP DOT 2016-10**

**Request for Proposals**

**Submission**

**February 29, 2016**

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

**REQUEST FOR PROPOSALS**

**RFP ISSUED ..... FEBRUARY 29, 2016**

**MANDATORY CONFERENCE... ..... MARCH 14, 2016, 10:00 AM (EST)**

**AT: ..... DEPARTMENT OF TRANSPORTATION,  
7 HAZEN DRIVE,  
ROOM 114  
CONCORD, NH**

**STATE CONTACT ..... SUSAN SOUCIE, PE  
..... TSMO PROJECT MANAGER**

**Phone (603) 271-6862  
Fax (603) 271-8626**

**CONTRACT TYPE..... LUMP SUM**

**PROPOSALS DUE ..... APRIL 22, 2016, 3:00 PM (EST)**

**AT: DEPARTMENT OF TRANSPORTATION**

**BUREAU OF TRANSPORTATION SYSTEMS MANAGEMENT AND  
OPERATIONS (TSMO)**

**110 SMOKEY BEAR BOULEVARD  
CONCORD, NH 03301**

**State of New Hampshire  
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**1.0 INTRODUCTION**

The New Hampshire Department of Transportation (NHDOT) invites proposals from Contractors (Contractors) to design and build an Advanced Transportation Management System (ATMS) on the Frederick E. Everett Turnpike (FEET) from the Massachusetts state line in Nashua to the I-93 Exit 13 interchange in Concord with additional work possible along the existing NHDOT fiber optic infrastructure, as described in this Request for Proposals (RFP). This project is to include new Intelligent Transportation System (ITS) field devices and a new wireless communications network connecting the field devices to the existing NHDOT Transportation Management Center (TMC) in Concord. The system will also include connection to the Department's existing fiber optic communications system along the I-93 portion of the FEET corridor. Following the Department's acceptance of the FEET Corridor ATMS, the Contractor will be required to work with the Department's Statewide ATMS Integrator, Southwest Research Institute (SwRI), to integrate the FEET Corridor ATMS into the New England Compass ATMS.

**1.1 SCHEDULE OF EVENTS**

The following table provides the Proposed Schedule of Events for this RFP through Contract Award.

**Table 1: Proposed Schedule of Events**

EVENT	DATE	TIME
RFP Issued & Contractor Inquiry Period Begins	February 29, 2016	
RSVP deadline for MANDATORY Contractor Conference	March 10, 2016	4:00 PM
MANDATORY Contractor Conference	March 14, 2016	10:00 AM
MANDATORY Letter of Intent Submission	March 25, 2016	4:00 PM
Contractor Inquiry Period Ends	March 30, 2016	4:00 PM
Final State Responses to Contractor Inquiries	April 5, 2016	
Final Date for Proposal Submission	April 22, 2016	3:00 PM
Invitations For Presentations (If Necessary)	May 16, 2016	
DB Contractor Presentations / Interviews (If Necessary)	Week of May 30, 2016	
Contract Negotiations/Finalization	June 6, 2016 to July 12, 2016	
Anticipated Governor and Executive Council Meeting to Execute the Contract	August 24, 2016	
Anticipated Notice to Proceed	On or before August 29, 2016	

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**1.2 FIRM FIXED PRICE**

The Department plans to execute a Firm Fixed Price contract as a result of this RFP. The Contractor shall submit the cost proposal on the forms provided by the Department as shown in Appendix E or on similarly formatted and labeled, computer generated forms. The Contractor shall specify a price breakdown for each component for each ATMS subsystem for the Department's use. The Contractor shall add up the price breakdown from each component subsystem to provide a Contract Lump Sum Price for the project. This lump sum price shall include all costs for the systems engineering, design, permitting, construction, integration, and maintenance of the FEET Corridor ATMS. This lump sum price shall also include all labor, tools, hardware, materials, equipment, storage, transportation, inspection, testing, training, guaranties/warranties, and incidentals necessary to provide a complete, functional ATMS for the FEET corridor.

If a contract award is made, it shall be made based upon the Department's evaluation of the submitted proposals in accordance with the review process and criteria outlined in Section 4 below. Any resulting contract from this RFP will be a non-exclusive contract. The Department reserves the right, at its discretion, to retain other vendors to provide any of the services or deliverables identified under this procurement.

The Department has established an approximate budget for this project of between \$3.75 million and \$4 million. This budget is expected to be funded with 100 percent Turnpike dollars; therefore, this is not a federally funded project. The Department reserves the right, at its discretion, to make an award by item, by a part or portion of an item, by groups of items, or by the total proposal in accordance with the Department's available budget.

**1.3 CONTACT INFORMATION**

The Point of Contact for this procurement is:

Susan Soucie, PE  
TSMO Project Manager  
New Hampshire Department of Transportation  
Bureau of Transportation Systems Management and Operations (TSMO)  
110 Smokey Bear Boulevard  
Concord, New Hampshire 03301

Telephone: (603) 271-6862  
Fax: (603) 271-8626  
E-Mail: SSoucie@dot.state.nh.us

From the date of the release of this RFP until a contract has been awarded and announced regarding the selection of a Contractor, there shall be no permitted communications with any personnel employed by, or under contract with, the State of New Hampshire regarding this RFP

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except through the Point of Contact listed above or through the Point of Contact's approved representative. State employees and TSMO consultants have been directed to strictly avoid discussions, conversations, or correspondence with any likely bidder unless expressly authorized by the Point of Contact.

**1.4 TERMS AND DEFINITIONS**

The Terms and Definitions that apply to this RFP are located in Appendix A. It is noted that the use of ATMS may have two interpretations: the New England Compass ATMS located at the TMC in Concord; and the FEET Corridor ATMS being developed and constructed by this project. All references to ATMS in this document shall be interpreted to mean the FEET Corridor ATMS unless specifically identified as the New England Compass ATMS (or Statewide ATMS).

**1.5 SUPPORTING DOCUMENTATION**

The supporting documents for this RFP are listed below.

**FEET ATMS Project Documents**

1. Frederick E. Everett (FEE) Turnpike Corridor ATMS Deployment Plan
2. Frederick E. Everett Turnpike (FEET) ATMS Project High Level Design Document (Appendix C)
3. Frederick E. Everett Turnpike (FEET) Preliminary (30%) Concept Plans (Appendix F)
4. Frederick E. Everett Turnpike (FEET) ATMS Preliminary Traceability Matrix

**Other Relevant ITS Project Documents**

1. New Hampshire Statewide ITS Architecture
2. Statewide 5-Year Strategic Plan
3. Existing Conditions information (Appendix H)
4. Existing Fiber Optic system architecture as-built
5. TMC Access Security Requirements/Protocol

Electronic copies of the relevant ITS project documents will be available on-line prior to the Mandatory Contractor Conference or from the Project Point of Contact identified in **Section 1.3: Contact Information** upon request.

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**1.6 ADDITIONAL DOCUMENTS AND REFERENCE MATERIALS**

The documents and reference materials listed below contain standards, guidelines, and practices of the Department that will be useful during this project. This list is offered as a reference only. It is not intended to represent a comprehensive list of all required documents. Additional documents and standards may apply. It is the responsibility of the Contractor to obtain these documents, at their own expense, and adhere to any applicable standards found therein and as required by NHDOT. Where “latest edition” or “latest version” is referenced, it is defined to mean the edition or version that was most recently published and available at the time of the RFP publication.

1. AASHTO – A Policy on Geometric Design of Highways and Streets, latest edition
2. AASHTO – LRFD Bridge Design Specifications, latest edition
3. AASHTO – Standard Specifications for Highway Bridges, latest edition
4. AASHTO – Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013 edition with all published interims
5. AASHTO – LRFD Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, latest edition with all published interims
6. AASHTO – Roadside Design Guide, latest edition
7. Federal Highway Administration - Standard Highway Signs Book, 2004 edition with 2012 Supplement.
8. Federal Highway Administration - Manual on Uniform Traffic Control Devices, 2009 edition
9. New Hampshire Department of Transportation - Bridge Design Manual, latest version.
10. New Hampshire Department of Transportation- Highway Design Manuals, Volumes 1 & 2, latest version
11. New Hampshire Department of Transportation - Standard Specifications for Road and Bridge Construction, 2016 edition.
12. New Hampshire Department of Transportation - Standard Plans for Road Construction, latest on-line edition (see <http://www.nh.gov/dot/org/projectdevelopment/highwaydesign/standardplans/index.htm>)
13. New Hampshire Department of Transportation – Manual on Drainage Design for Highways, latest version
14. New Hampshire Department of Transportation – Utility Accommodation Manual, latest version
15. New Hampshire Department of Transportation - Construction Manual, latest version.
16. New Hampshire Department of Transportation – Survey Manual, latest version
17. New Hampshire Department of Transportation - Right of Way Manual, latest version.
18. New Hampshire Department of Transportation – “Traffic Control Procedural Guideline for the Bureau of Turnpikes”

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19. New Hampshire Department of Transportation – “Flagger and Uniformed Officer Use in Work Zones – Guidelines and Policy”
20. New Hampshire Department of Transportation – “Work Zone Safety and Mobility Policy – Guidelines”
21. New Hampshire Department of Transportation – “Positive Protection Guidance for Work Zones”
22. New Hampshire Department of Transportation - CADD Procedures and Requirements, latest version.
23. New Hampshire Department of Transportation - Wetlands Impact Manual, latest version
24. Existing DOT/FCC Authorizations
25. 47 C.F.R. Part 15, Part 90 and Part 101
26. Utility Company standards, guidelines, details, and requirements as published by each utility.

Additional Specifications, Manuals, policies, guidelines and information may be available on the NHDOT web site: <http://www.nh.gov/dot>

## **1.7 PROJECT OVERVIEW**

The NHDOT has initiated this project to deploy an ATMS in southern New Hampshire on the Frederick E. Everett Turnpike (FEET) corridor. The FEET corridor includes segments of US Route 3, I-293 and I-93 and runs from the Massachusetts state line in Nashua to the I-93 Exit 13 interchange in Concord.

This project is to include new ITS field devices and a new wireless communications subsystem connecting the field devices to the existing NHDOT TMC in Concord. The ATMS is to be utilized to improve NHDOT operations, construction, traffic management, work zone safety, congestion mitigation, and to enhance incident response. This project is consistent with the NHDOT Statewide ITS Architecture and is included in the NHDOT Statewide 5-Year Strategic Plan.

The FEET ATMS Project will include the following elements:

- A Dynamic Message Sign (DMS) subsystem consisting of four (4) new DMS deployed along the project corridor;
- A Closed Circuit Television (CCTV) subsystem consisting of seventeen (17) new CCTV cameras deployed along the project corridor and one (1) additional CCTV camera at an existing CCTV site previously deployed along the project corridor;
- A Motor Vehicle Detection System (MVDS) subsystem consisting of fifteen (15) new MVDS deployed along the project corridor;
- A new Communications Subsystem that includes the following components:
  - A wireless component to provide connection from the new ITS field devices to the new communication hubs. These hubs will create a new wireless “backhaul” for the corridor;

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- A fiber optic component to provide connection between the new wireless communications components and the existing fiber optic communications system along the I-93 segment of the FEET;
- New wireless connections to the three (3) existing Roadway Weather Information Station (RWIS) sites already installed along the project corridor; and
- Enhanced communications connectivity to five (5) existing Portable Changeable Message Signs (PCMS) currently deployed along the project corridor.
- A Central Control subsystem that will include an isolated workstation, a hardened laptop computer, and all FEET Corridor ATMS communications connections at the TMC; and
- Integration of the FEET Corridor ATMS into the existing New England Compass ATMS following successful testing and acceptance of all of the FEET Corridor ATMS subsystems.

In addition to the ITS device, communications, and central control subsystems, the FEET ATMS Project includes updating and further development of the systems engineering documentation that has been started for the development of this RFP. A Preliminary ATMS Deployment Plan, a High Level Design Document, and associated Preliminary Traceability Matrix have been developed within the framework of the Systems Engineering (SE) Process. The Contractor shall progress the SE documentation as described in **Section 1.8.2 Systems Engineering Process**.

**1.7.1 Project Duration (Term)**

The expected duration of the project is eighteen (18) months from the date of Notice to Proceed (NTP) to Final System Acceptance. Within this timeframe, it is expected that design and construction activities will be Substantially Complete within sixteen (16) months from NTP. Substantial Completion is achieved upon satisfactory completion of all phases of system acceptance testing prior to the project Operational Test period, Integration Central Control Test, and Training, as described in **Section 2.5 Integration and System Acceptance Testing** and **Section 2.6 Training**.

NHDOT desires to bring the FEET Corridor ATMS Project on-line and in service as soon as practical. The Contractor shall provide due consideration to advancing any equipment that may be used by the Department as soon as feasible when developing the project schedule.

Following Final System Acceptance, this procurement includes a required twenty-four (24) month System Warranty and Maintenance period. There will be a single System Warranty and Maintenance period for all elements of the project that will be initiated on the date the written Final System Acceptance is granted by the Department. NHDOT has the option and right to extend this period for up to three (3) additional twelve (12) month extensions, at the sole discretion of NHDOT. The initial twenty-four month maintenance period shall be considered part of the base contract. Each of the three additional twelve month extensions shall be separate bid items on the cost proposal but will not be factored into the cost scoring for the proposal.

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**1.8 ITS AND COMMUNICATIONS SUBSYSTEM PROJECT ELEMENTS**

The following ITS and communications subsystem elements have been identified for this project:

- **Closed Circuit Television (CCTV) Camera Subsystem:** A total of seventeen (17) CCTV camera systems and one additional camera added to an existing CCTV system site have been identified for video monitoring within the project corridor.
- **Dynamic Message Signs (DMS) Subsystem:** Four (4) permanent DMSs have been identified for installation within the project corridor.
- **Motor Vehicle Detection System (MVDS) Subsystem:** Fifteen (15) MVDSs have been identified for installation within the project corridor.
- **Communications Subsystem:** The ITS field devices shall be connected to a wireless microwave communications backhaul utilizing traditional microwave wireless transmission systems, or approved equivalent, for data and video communications, and connected to the Department's existing fiber optic communications system along I-93.
- **Central Control Subsystem:** Standalone ITS subsystem control equipment and vendor software shall be installed on a new workstation (hardware) at the TMC to control all newly installed ITS devices and receive and process all ITS device data and CCTV video signals until Substantial Completion and subsequent integration with the Statewide ATMS.

**1.8.1 Frequency Coordination and FCC Spectrum Licensing**

The Contractor shall obtain Federal Communications Commission (FCC) authorization for NHDOT to operate the wireless communications system (WCS) to receive and transmit ITS equipment data along the project corridors. The communications system consists of a "backhaul" series of hubs interconnected by point-to-point microwave links and hubs connected to ITS device sites using point-to-point microwave, and point-to-multipoint technologies. Hub and Remote Sites are referred to as Sites.

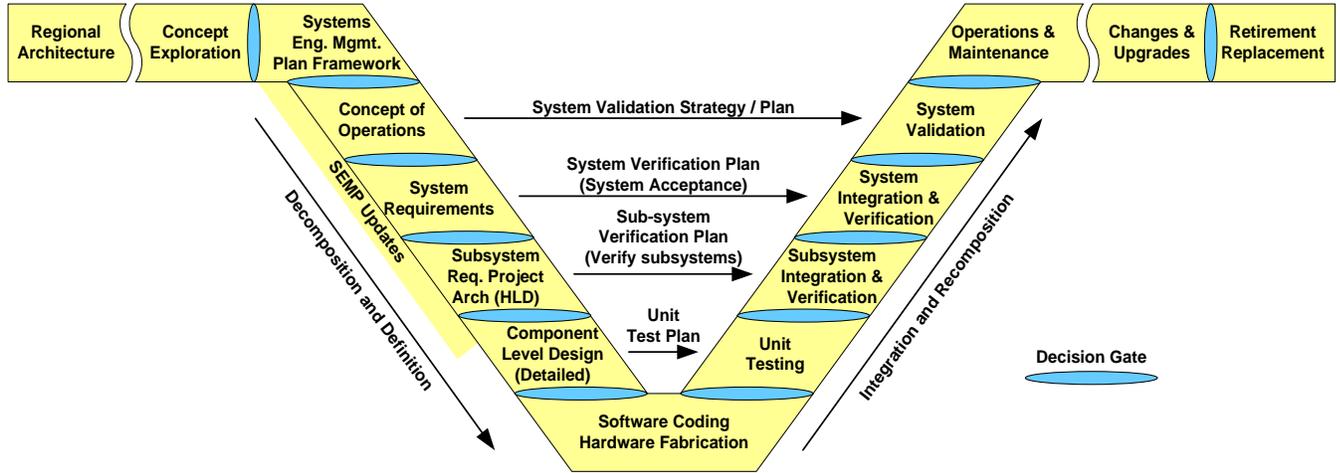
NHDOT requires a licensed frequency for all links in the the microwave backhaul. NHDOT does not currently have a licensed frequency in the 23 GHz band. NHDOT currently holds an FCC license in the 4.9 GHz Public Safety spectrum and in the 18 GHz Terrestrial Fixed Service spectrum.

The Contractor shall perform all tasks needed to develop and support FCC licensing for any and all proposed backhaul antenna sites, according to the functional requirements detailed in this RFP. The Contractor shall develop all required support documentation, including signed consents from co-channels/adjacent-channel operators. In the event that State and Local regulations require that additional applications be filed for the licensing of proposed backhaul antenna sites, the Contractor shall develop all such required documents and shall fully support the application process(es).

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## 1.8.2 Systems Engineering Process

This project will require utilization of the Systems Engineering (SE) Process, as recommended by the Federal Highway Administration (FHWA) and illustrated in the "V" diagram shown in Figure 1. This process has been used for the development of the RFP solicitation, and shall continue to be used by the selected Contractor in the development, integration and testing of the hardware and software subsystems defined within the request for proposal.



**Figure 1: Systems Engineering Process**

The systems engineering approach is a rigorous and organized means of guiding and documenting the design, implementation and testing process. It starts by defining the needs of the system users. These needs form the basis for the development of functional requirements, and the design is evaluated against those requirements. The documentation of the process helps to ensure that the design can be justified at all times by articulated needs, and that all the needs are accommodated within the design. In short, the systems engineering process leads to a system design that is complete and correct.

NHDOT has completed the development of the following SE documents and has included them as appendices to this RFP.

- Frederick E. Everett Turnpike (FEET) ATMS High-Level Design Document (Appendix C)
- Frederick E. Everett Turnpike (FEET) ATMS Preliminary Concept (30%) Plan Set (Appendix F)

NHDOT has completed the development of the following additional SE documents and will distribute them at the Mandatory Contractor Conference (Section 3.3).

- Frederick E. Everett Turnpike (FEET) Preliminary Traceability Matrix
- Frederick E. Everett (FEE) Turnpike Corridor ATMS Deployment Plan

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Within this procurement, the Contractor will be required to continue the SE Process, and in collaboration with NHDOT, initiate/complete the following documents and work efforts:

- Detailed Level Functional Requirements;
- System Design in two phases:
  - Preliminary System Design (PSD); and
  - Detailed System Design (DSD);
- System Installation and Integration;
- System Testing and Acceptance;
- System Warranty and Maintenance; and
- Updated Traceability Matrix upon completion of each milestone of the project, as defined in Section 3.20.4 Work Plan.

### **1.9 CONNECTION OF EXISTING NHDOT ITS DEVICES**

The NHDOT has several existing ITS devices that are currently within the limits of this project. Connection of these devices to the new wireless communications backhaul hubs are included as a requirement for this contract.

The existing ITS devices that will require connection to the new wireless communications backhaul hubs within the project limits include:

- Five (5) Portable Changeable Message Signs (PCMS); and
- Three (3) Roadway Weather Information Stations (RWIS).

Locations of these devices are shown in the Frederick E. Everett Turnpike (FEET) ATMS Preliminary Concept (30%) Plan Set included in Appendix F. Information available on existing ITS devices is included in Appendix H: NHDOT Existing ITS Devices – Available Information.

Unit bid prices are solicited for retrofitting these existing devices to connect to and communicate with the new wireless backhaul hubs. The Contractor shall also be responsible for providing support with the integration of the proposed communications subsystem for these existing devices.

### **2.0 SCOPE OF WORK**

The Contractor shall design, furnish, install, test, and integrate an Advanced Transportation Management System (ATMS) and all associated wireless communications and central control subsystems for the FEET corridor. This ATMS deployment shall meet all of the requirements

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detailed in Appendix C: High Level Design Document of this RFP and shall include the provisioning of all infrastructure, equipment, cabling, and peripheral equipment necessary to ensure the operation and maintenance of the FEET Corridor ATMS project.

## **2.1 ATMS DEPLOYMENT PLAN REVIEW**

An ATMS Deployment Plan has been developed for the entire FEET corridor. This document represents a master plan for the FEET Corridor. The Contractor shall review the ATMS Deployment Plan with consideration given to intended system capacity, future deployments, and integration into the Statewide ATMS. The Contractor shall develop and submit a memorandum to NHDOT detailing any requests for clarifications regarding the ATMS Deployment Plan no less than 14 calendar days prior to the initiation of the Preliminary System Design phase.

## **2.2 HIGH LEVEL DESIGN DOCUMENT REVIEW**

A High Level Design Document (HLDD) has been prepared for the FEET Corridor ATMS project. The Contractor shall review the HLDD, included as **Appendix C**, and treat the requirements as project specifications. Based on this review, with consideration given to the integration of the FEET Corridor ATMS into the Statewide ATMS, the Contractor shall submit a memorandum to NHDOT detailing any requests for clarifications regarding the Department's expectations for the System Design and follow-on integration. If the Department's clarifications change the HLDD requirements, the Contractor shall update the HLDD, as required by NHDOT. A site visit of the TMC will be accommodated upon written request from the Contractor.

## **2.3 DETAILED LEVEL FUNCTIONAL REQUIREMENTS**

The Contractor shall develop a Detailed Level Functional Requirements (DLFR) document that addresses all of the functional needs of the project. The HLDD for the FEET Corridor ATMS project shall be utilized as a baseline document. A DLFR document shall be developed utilizing the Systems Engineering Process.

### **2.3.1 Detailed Level Functional Requirements Process**

**Step 1: Kick-off Meeting:** The Contractor shall conduct a kick-off meeting to align expectations of all project stakeholders, related to the Concept of Operations/High Level Functional Requirements. The second half of the meeting shall initiate the Detailed Level Functional Requirements task.

A minimum of fourteen (14) days prior to this meeting, the Contractor shall submit a meeting agenda and a list of requested State attendees. Included in this meeting will be, at a minimum the FEET Corridor ATMS Project Manager, TSMO Project Manager, Quality Assurance Consultant, and the Key Contractor personnel responsible for the design, construction and integration of the communications subsystem and ITS devices. A minimum of seven (7) days prior to this meeting, the Contractor shall submit any meeting handouts for review.

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**Step 2: Detailed Functional Requirements Development:** The Contractor shall develop a DLFR package. The Contractor shall revise the document until the Contractor receives written approval from the TSMO Project Manager.

**Step 3: Functional Requirements Task Transition Meeting:** The Contractor shall conduct a task transition meeting. The first half of the meeting shall review the Detailed Level Functional Requirements developed in Step 2, and the second half shall initiate the System Design tasks.

**2.3.2 Detailed Level Functional Requirements Deliverables**

- DLFR Document – Developed from the HLDD.
- Expanded Traceability Matrix – The Contractor shall expand the Preliminary Traceability Matrix developed for this project, as required, to ensure the Detailed Level Functional Requirements trace back to the High Level.

**2.4 SYSTEM DESIGN**

The System Design will entail a two-step process – Preliminary System Design and Detailed System Design. Both phases of design will follow the same process as described below.

**Task Kick-off Meeting and/or Field Walkthrough:** The Contractor shall conduct a task kick-off meeting for each phase of design to align expectations of all project stakeholders related to the design phases. This meeting shall include a field walkthrough with relevant NHDOT representatives, if required, to detail current conditions and FEET Corridor ATMS plans. This walkthrough is intended to review field installations and address design and construction concerns. Contractor will be responsible for conducting field review by the Contractor's New Hampshire Certified Wetland Scientist to verify that there are no wetlands in or adjacent to any of the project sites.

**System Design Meetings:** The Contractor shall participate in the following meetings relative to the System Design in the Preliminary and Detailed Design submittal phases as directed by NHDOT:

- Utility Engineer Briefing –The Contractor shall meet with the NHDOT Utility Engineer as necessary to update him/her on design changes, anticipated design and construction scheduling, and anticipated/potential utility impacts.
- Utility Companies – The Contractor shall meet with the relevant utility companies as necessary to coordinate utility activities. These meetings will be coordinated with the TSMO Project Manager or the Department's designated Utility Engineer.
- Turnpike Construction Engineer Briefings – The Contractor shall meet with the Turnpike Construction Contract Administrator as necessary to review project design issues, traffic control plans (TCP) and scheduling.

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- FEET Corridor ATMS Project Manager / Coordinator / Coordinator Briefings – The Contractor shall meet with the FEET Corridor ATMS Project Manager prior to refinement of the 30% Concept Plans as necessary to review project design issues, TCP and scheduling.
- Town/City – The Contractor shall meet with the affected towns and cities as necessary to discuss design plans and municipal concerns. If construction or construction access is expected to occur along municipally maintained roadways, the Contractor shall meet with the relevant municipal officials to coordinate traffic control requirements.
- Field Review – The Contractor shall meet with NHDOT as necessary to review field installations and address design and construction activities. All site visits will be coordinated with the TSMO Project Manager. The Contractor shall be responsible for all field investigations, including contact and coordination with Dig Safe.
- Turnover of Comments Meeting – The Contractor shall meet with NHDOT to receive and review comments. This meeting will include discussions of outstanding issues that require additional design/coordination efforts.

**System Design Task Transition Meetings** – The Contractor shall conduct a task transition meeting upon completion of each phase of the System Design task.

A minimum of fourteen (14) days prior to this meeting, the Contractor shall submit a meeting agenda and a list of requested State attendees. Included in this meeting will be, at a minimum the FEET Corridor ATMS Project Manager, TSMO Project Manager, Quality Assurance Consultant, and the Contractor Key Personnel responsible for the design, construction and integration of the communications subsystem and ITS devices. A minimum of seven (7) days prior to this meeting, the Contractor shall submit any meeting handouts for review.

#### **2.4.1 PRELIMINARY SYSTEM DESIGN (PSD)**

The Preliminary System Design (PSD) shall be the initial effort on the part of the Contractor to translate the identified system requirements from the High Level Design Document and FEET ATMS Preliminary Concept (30%) Plan Set into real technical solutions. The Contractor shall identify the major field and communications subsystem equipment and locations that meet the High Level Design Requirements for integration into the FEET Corridor ATMS Project. The Preliminary System Design submittals are intended to provide NHDOT the opportunity to evaluate the proposed design relative to current design standards, utility coordination, right-of-way impacts, environmental impacts, temporary traffic controls, and other potential community concerns associated with the proposed design.

The Preliminary System Design submittals shall conform to the New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction (including Supplemental Specifications) and all other relevant NHDOT design standards as referenced in **Section 1.6 Additional Documents and Reference Materials**.

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**2.4.1.1 Preliminary System Design Deliverables**

Camera Video – The Contractor shall conduct field investigations, including the recording of video at the exact locations and camera mounting heights of the proposed CCTV locations using a video recording device that provides a comparable field of view to the proposed CCTV. Digital video files of these recordings shall be provided to NHDOT for review and approval. Video recordings shall consist of a minimum of eight (8) minutes of video coverage at each CCTV camera site, with a full 360 degree pan and a full zoom along each direction of each roadway and ramp visible from the camera site.

FCC Licensing – Engineering Study – The Contractor shall perform an engineering study for all proposed point-to-point wireless microwave paths using a recognized radio frequency modeling tool. The study shall consider engineering aspects such as location and terrain, antenna type, transmitted power limitations, fade margins, link uptime, Fresnel zone clearance or penetration, coverage with respect to the communications subsystem, site antenna requirements and other technical issues related to operating at sites.

The engineering study shall provide information to be used by the Contractor to request frequency coordination with appropriate and authorized organizations who shall identify all of the required Federal Communications Commission (FCC) regulated spectrum, channels, or equipment configuration for the project at specific locations. Upon obtaining coordination notification and/or concurrence from the appropriate and authorized organizations, the Contractor shall apply for FCC authorizations and licensing on behalf of the Department.

Before submitting the application(s), the Contractor shall submit all technical parameters used by the Contractor to obtain authorization to the Department. The Department will review the application and provide data such as the Department contact information, control points, and NHDOT FCC registration number. All cost associated with coordination and license fees shall be the responsibility of the Contractor. Post-licensing required notification to the FCC such as, but not limited to, build-out construction notifications shall be the responsibility of the Contractor through the end of the warranty period.

Refine 30% Concept Plans to a 60% Design Plan Set – The Contractor shall refine the Concept Plans to develop design plans that detail each equipment site. Plan elements shall include, as a minimum:

- Location of field equipment infrastructure and structural details, foundations, conduit runs, guardrail, equipment cabinets, erosion and sediment control
- Guardrail calculations (shall be signed and stamped by a Professional Engineer licensed in the State of New Hampshire)
- Power Plant - Load analysis
- Solar Power plant analysis, if required
- Environmental commitments/permit applications as needed.
- Utility service connections
- Plan Narrative

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- Cross sections at structure locations
- Traffic Control Plans
- Operations/Maintenance Access Plans
- Access Roads and or Special Service requirements
- Wireless Path Analysis
- Line of Sight Analysis
- Fiber optic splice tables
- Communications Network Narrative
- FCC Authorization data parameters
- Security Plan

Structural Calculations – The Contractor shall develop a structural design, including calculations for each DMS structure, CCTV camera pole, MVDS pole and antenna tower. A Professional Engineer (PE) licensed in the State of New Hampshire shall sign and stamp the structural and foundation calculations for project infrastructure, including CCTV, MVDS and DMS.

Communications System Build-out Analysis – The Contractor shall submit a communications system design and supporting documentation to show that the proposed communications system can support the full build out of all ITS devices as indicated in the FEET ATMS Deployment Plan.

Network Architecture and Description – The Contractor shall submit a network architecture plan and high level design narrative that generally describes the system and how the system works. The architecture shall indicate the locations and capacities of the wireless subsystem at each node, the symmetry of the system and a description of the non-physical elements of the network.

Subsystems Block Diagrams and Equipment Documentation – The Contractor shall submit cut sheets and supporting documentation for all systems and equipment.

NHDOT TMC Installation Plans – The installation plans shall document the installation of all new equipment in the TMC facility and shall include equipment, locations, conduit, cabling, and required permit materials. The TMC Plan shall also identify any areas where the existing NHDOT equipment is impacted and the power requirements to support the proposed hardware.

Subsystem Acceptance Test Plans - The Contractor shall develop test plans and test procedures for each ITS device and each subsystem to verify system operation in compliance with the High Level Design Document. Subsystem Acceptance Test Plans shall include testing for the FEET Corridor ATMS in isolation using vendor software.

Central Control Test Plans – The Contractor shall develop test plans and test procedures for each subsystem to verify the ATMS operates in compliance with the High Level Design Document and the Contractor’s Detailed Functional Requirements. The Central Control Test Plans shall include two components: the Central Control testing performed on the isolated system, including the CCTV nighttime test and the MVDS

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validation testing; and the Integration Central Control Test, which tests the FEET Corridor ATMS components following integration into the New England Compass ATMS.

Updated Traceability Matrix - The Contractor shall update the traceability matrix to include additional requirements identified within the PSD.

Operations and Maintenance Access Plan – All devices shall be located adjacent to a level work surface that can be accessed by NHDOT maintenance personnel. The Contractor shall provide a detailed plan for the continuing access to each ITS device location and all hardware deployed in the field. The access plan shall include a proposed access and egress path, the type of equipment required to maintain the hardware (i.e. 12-foot ladder, bucket truck with a 35-foot reach, portable camera lowering device tool, etc), and any temporary traffic control that would be required to provide access to the equipment. A level concrete work pad shall be provided at each control cabinet door. A stable and level pad shall be provided at all locations where a ladder will be placed for maintenance access. If special access roadways are required to be constructed for continuing access by NHDOT maintenance personnel, the Contractor shall design and construct the access roadways following the NHDOT standard practice for access roadways at stormwater management (BMP) sites. A minimum 10-foot wide, level gravel path shall be the minimally acceptable access roadway for maintenance.

Security Plan – The Contractor shall develop a Security Plan that shall protect the NHDOT network as ITS field devices are tested and integrated into the NHDOT network. DoIT approval review of this plan is required prior to this device testing and integration.

All Contractor personnel who will have access to the NHDOT network will be required to undergo a State Police Criminal Record screening; see Section 5.7 for additional information. The Contractor shall provide a list of personnel who need access to the TMC and the NHDOT network for the project. Each individual shall be required to apply in person at the State Police office at 33 Hazen Drive in Concord with a primary identification (a current, valid and unexpired picture ID such as a driver's license or passport) OR may mail in an application notarized by either a Notary Public or Justice of the Peace. There is a processing fee of \$25 per person which shall be the Contractor's responsibility. Any individual who cannot pass the screening will be prohibited from accessing the NHDOT network and may be prohibited access to the TMC operations workspace. It is the Contractor's responsibility to provide personnel who are capable of conducting the necessary integration and testing and can pass the Department's screening requirement.

Leasing Agreements – The Contractor shall provide preliminary leasing agreements for any privately- or municipally-owned structure where the Contractor proposes to install new hardware. The leasing agreements shall include the structure owner's terms and conditions and leasing costs for review by the Department. All leases will require approval by the New Hampshire Attorney General's office prior to accepting the lease agreement.

Federal Aviation Administration (FAA) Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) – The Contractor shall review the proposed ITS devices in accordance with 14 C.F.R. Part 77.9 and in accordance with Section 5.34.

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Integration Specifications and Documentation – The Contractor shall provide a signed copy of the vendor's or supplier's equipment specifications, including the NTCIP 1203 version 2 or latest supported specifications in accordance with Section 5.35.

Environmental Study - This project will not receive federal funding and therefore it is not expected that full environmental review under the National Environmental Policy Act (NEPA) will be necessary. However, in keeping with NHDOT policy, the Contractor will be responsible for conducting an environmental review of the proposed project for review and approval by the Department. The Contractor will be required to complete the following tasks to support the environmental review:

- Prepare and submit an *Environmental Review – Short Form (Non-Federal Projects)* in accordance with NHDOT standards to document the environmental analysis.
- Address the following environmental issues:
  - Air Quality – Confirm that the project does not require a conformity determination or an 8-hour CO analysis.
  - Cultural Resources – Confirm that there are no affected properties on or eligible for the National Register of Historic Places. (See also the scope item describing the “Request for Project Review” below.)
  - Endangered Species – Coordinate with the NH Natural Heritage Bureau, NH Fish and Game and the US Fish and Wildlife Service to confirm that the project will not affect state or federal threatened or endangered species.
  - Floodways – Confirm that the project will not result in significant floodplain impacts.
  - Noise – Confirm that the project is not a Type I highway project.
  - ROW – Confirm that the proposed action does not require the acquisition of residences or businesses, or acquisitions to an extent that impairs the functions of the affected properties.
  - Section 6(f) – Confirm that there are no properties protected by Section 6(f) of the Land and Water Conservation Fund Act.
  - Water Quality – Confirm that the project will not have more than a negligible impact on surface waters.
  - Wetlands – Confirm that the project will not require an Army Corps of Engineers Individual Permit.

The Environmental Study shall contain a list of the project sites with a determination as to whether any environmental permits are required, based on the Preliminary System Design. The Contractor will work directly with NHDOT to ensure that the environmental documentation and supporting information adequately addresses NHDOT standards. A

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draft environmental document will be required to be submitted for NHDOT review as part of the Preliminary System Design deliverables, and the Contractor will be required to finalize the document in response to NHDOT comments prior to construction as part of the Detailed System Design deliverables.

NH Division of Historical Resources Request for Project Review: The Contractor shall complete a Request for Project Review (RPR) for NHDOT review prior to submittal to the NH Division of Historic Resources (NHDHR). This task will include visits to the project sites, completion of the RPR, and attendance at one coordination meeting in Concord. Should it be determined by NHDOT that additional investigations are warranted, the Contractor shall conduct such additional investigations as NHDOT determines are required. Should it be determined by NHDHR that additional investigations are warranted, the Contractor shall contact the TSMO Project Manager for further guidance. Information on the requirements for the RPR can be found online at: <http://www.nh.gov/nhdhr/review/>.

The Contractor shall revise the Preliminary System Design plans and associated submission items until NHDOT provides written approval to proceed to the Detailed System Design.

**2.4.1.1.1 NHDOT 60% Plan Set**

To include at a minimum:

- Site Plans in both 11" x 17" format and 22" x 34" plan sheets:
  - Plans shall be drawn to 50 scale and may include details drawn at an alternative legible scale;
  - Existing and planned FEET configuration and all ITS devices;
  - A minimum of 200 feet upstream and downstream of each ITS site, including service connection shall be shown;
  - Wireless connections to remote ITS devices;
  - Provide cross sections at 10 scale for all DMS structures (both ground mounted and overhead) at the DMS location and at 50 feet upstream and downstream (total of three cross-sections required), as well as any other critical areas;
- Traffic control plans and narrative for equipment installation;
- Final Geotechnical Report (shall be signed and stamped by the Geotechnical Engineer);
- DMS Support Structure and Sign Mounting Details (shall be signed and stamped by a PE licensed in NH);
- DMS Support Foundations (shall be signed and stamped by a PE licensed in NH);
- CCTV Camera Site Pole and Foundation Drawings (shall be signed and stamped by a PE licensed in NH);
- CCTV Camera and Antenna Mounting Details (Typicals);

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- MVDS Site Pole and Foundation Drawings, if independently mounted (Typicals);
- MVDS and Antenna Mounting Details (Typicals);
- Communications Hub and tower locations including site plans;
- Communications Hub Antenna Tower Elevation with antennas; and
- All other plans, typicals, details, or drawings required to allow NHDOT to understand the intent and plan for the ATMS construction.
- Draft permit plans in support of a Wetlands Permit (RSA 482-A), Shoreland Permit (RSA 483-B), and/or Alteration of Terrain Permit (RSA 485-A:17) for any site where such applications are determined to be necessary by the Contractor's draft Environmental Study.

**2.4.1.1.2 Equipment Submittals**

An equipment submittal for each item of equipment to be provided under this contract shall be delivered to NHDOT for review and approval before job delivery or field installation. Each equipment submittal shall include at a minimum:

- A complete bill of materials covering each item or assembly;
- Single-line control schematics and functional block diagrams showing the physical interfaces between components;
- Product data (cut) sheets for all off-the-shelf equipment identifying the manufacturer, model, performance characteristics, plug and terminal connections, environmental requirements and all other data necessary to establish compliance with the High Level Design Document.
- For items mounted on support structures or poles, include mounting details and calculations to substantiate the materials and methods to be used;
- Equipment cabinet and enclosure layouts with: wiring drawings and schedules, rack elevations, wiring connection details, electrical power distribution wiring, breakers, transient voltage protection devices, AC power connections and metering;
- Cable plans and conduit schedules for all point-to-point cable runs including the associated cable labeling ID's; and
- A manufacturer recommended spare parts inventory list, including all spare parts and recommended equipment.

**2.4.1.2 Initiation of Construction Activities**

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The Contractor may be allowed to initiate relevant construction activities following NHDOT approval of the Preliminary System Design, at their own risk and expense. The Contractor shall be allowed to make equipment changes between the Preliminary System Design submission and Detailed System Design submission due to design changes and vendor product developments, with the approval of NHDOT. Final equipment selection shall be approved by NHDOT prior to purchase and installation.

**2.4.2 DETAILED SYSTEM DESIGN (DSD)**

Following approval of the PSD, the Contractor can begin the development of the Detailed System Design (DSD). The DSD shall expand on the solutions and requirements identified within the PSD, to the level of detail required to initiate construction or modify software components.

The DSD submittal is intended to provide NHDOT the opportunity to evaluate the final design relative to current design standards, right-of-way impacts, environmental impacts and other potential community concerns.

**2.4.2.1 Detailed System Design Deliverables**

- FCC Licensing – License Application – The Contractor shall produce the data required to ensure the coordination needed to avoid interference between the sites and existing co-channel and adjacent channel usage and file all necessary frequency coordination paperwork to obtain coordination from the appropriate authority.

The Contractor shall produce and deliver all support documentation including, if necessary, signed consents from co-channel and adjacent-channel operators and file for FCC licenses for sites (the “Licenses”). The Contractor shall be responsible for obtaining the appropriate FCC grant of Licenses to NHDOT for the FEET Corridor communications subsystem.

- Refine the 60% Plan Set to a 100% Ready for Construction Plan Set – This effort shall include detailing any changes to the wireless microwave radio backhaul hubs and field equipment locations or configuration, any updates to the communication system build out analysis, and the incorporation of NHDOT comments from the Preliminary System Design Deliverables detailed in Section 2.4.1.1.
- Subsystem Block Diagrams and Equipment Documentation – to include any equipment changes and additions from the PSD submission.
- Final NHDOT TMC Installation Plans – including wiring plans, rack layouts, and installation details, including any equipment changes and additions from the PSD submission.
- Revised Subsystem Acceptance Test Plans – to include any equipment changes and additions from the PSD submission.
- Updated Traceability Matrix – to include any equipment changes and additions from the PSD submission.

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- Final Field Installation Plans - Field Site Plans, including updated traffic control plans, wiring plans, rack layouts, and installation details, including any equipment changes and additions from the PSD submission.
- Construction Site Plans – to include detailed on site relevant work. Construction site plans may include access roadways, work pads, and other grading or land modifications to accommodate the operations and maintenance access plan.
- ITS Project Architecture – update the Statewide ITS Architecture, as needed to reflect the Detailed System Design (DSD) effort, as required by NHDOT.
- Updated Security Plan – The Contractor shall submit any updates to the security plan, including additional personnel who require screening as noted in the PSD submittals.
- Final Operations and Maintenance Access Plan – The Contractor shall submit any modifications or updates to the access plans for each site.
- Final Leasing Agreements – The Contractor shall submit approved and signed leasing agreements from the private and municipal structure owners for equipment to be installed on their facilities.
- FAA Form 7460 – The Contractor shall submit copies of each FAA Form 7460 filed for the installation and construction of the proposed equipment.
- Final Environmental Study – The Contractor will submit a final environmental study, responding to NHDOT comments on the draft document, and containing final jurisdictional determinations.
- Permit Applications – The Contractor will be responsible for preparing permit applications, including all necessary plans and supporting narrative or technical information, in support of Wetlands Permit (RSA 482-A), Shoreland Permit (RSA 483-B), and/or Alteration of Terrain Permit (RSA 485-A:17) applications for any site where such applications are determined to be necessary by the Contractor’s final Environmental Study.

**2.4.3 SYSTEM DESIGN SUBMITTAL REQUIREMENTS**

All plan submittals shall be compliant with NHDOT CAD/D Procedures and Requirements as found on the following website:

<http://www.nh.gov/dot/cadd/cadd.html>

A minimum of ten (10) complete hard copies shall be provided for each submittal. Additional copies shall be provided, as required, for review by specific NHDOT sections, municipalities, and utility companies upon request. The ten complete hard copies of the plan submissions shall each be 11” x 17” plan sets, with an additional submission of two 22” x 34” plan sets, for a total of 12 plan sets. Documentation submissions shall be

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contained in 3-ring binders with appropriate tabs separating the sections. Video submissions shall only require one copy of each video file on an electronic data storage medium compatible with the Department's IT network.

The Contractor shall not submit partial submissions for the submission packages defined above. Please note: An example of a complete submission would be a CCTV camera site submission that includes everything required to review the design, construction, and maintenance plan for that CCTV camera: site plans, camera pole and foundation shop drawings, equipment catalog cuts, guardrail design and calculations, power connections and calculations, operations and maintenance access plans, equipment cabinet, conduit, cabling, etc. An incomplete submission would be a foundation/camera pole alone.

The Contractor is encouraged to group equipment subsystem elements together to expedite the initiation of construction activities or minimize the number of NHDOT, utility company and municipal reviews. Examples of this approach may include: aggregating the northernmost communications hub and associated ITS devices as a single submission; aggregate all field devices located within a single municipality; or grouping submissions that impact a single utility company or NHDOT department together. However, a grouped submission shall still address all of the requirements for a complete submission package as described in the previous paragraph. The Department will be the final authority as to what constitutes an incomplete submission and reserves the right to reject any incomplete submissions from the Contractor.

The Contractor shall assume a 17 working day review period for each complete submittal. The Department will not be responsible for delays of reviews and approvals by the Department or others, including but not limited to utility companies, municipalities, or the FCC.

#### **2.4.4 AS-BUILT PLANS**

The Contractor shall submit as-built plans on archival quality mylar per the Department's procedures along with an electronic file of each as-built plan sheet. The Contractor shall furnish to the Department the following:

- 1 full size set of 22" x 34" signed and sealed as-built plans
- 4 sets of 11" x 17" (paper) as-built plans
- 2 sets of all final documentation in 3-ring binders (final documentation represents anything that was modified or created after the DSD submission)
- 1 set of as built Microstation files
- 1 complete set of PDF files of the as-built plans – each individual sheet shall be a separate PDF file
- 1 set of configuration files indicating all hardware configuration options and settings used to operate the equipment in hard copy and electronic formats

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- All electronic files shall be provided on a compact disk (CD) or digital video disk (DVD) or alternative digital format as approved by the Department

The Contractor's Engineer of Record in responsible charge of the project's design, shall professionally endorse (sign and seal) the record prints, the special provisions, and all reference and support documents.

All of the above material shall be submitted within sixty (60) days of Final System Acceptance of the project.

## **2.5 INTEGRATION AND SYSTEM ACCEPTANCE TESTING**

System acceptance shall be conducted in two phases: system acceptance testing for the FEET Corridor ATMS in isolation on a stand-alone server or virtual server; and system acceptance testing following integration with the Statewide ATMS. FEET Corridor ATMS system acceptance testing shall be a requirement for Substantial Completion while the Statewide ATMS system acceptance testing shall be a requirement for Final System Acceptance.

It is anticipated that some System Acceptance Testing activities will be initiated during construction activities. Upon completion of individual construction activities and equipment installation, the Contractor shall schedule relevant system acceptance testing activities required herein. All ITS subsystems and components installed as part of this project shall undergo System Acceptance Testing – CCTV, MVDS, DMS and communications.

The Contractor shall propose System Acceptance Testing plans and submit test plans and procedures as detailed herein. The FEET Corridor ATMS Preliminary Project Traceability Matrix shall be used as the initial baseline document. It shall be updated to ensure traceability to all system requirements. The Contractor shall provide the TSMO Project Manager with written notice no less than fourteen (14) calendar days prior to the initiation of any testing activities in order to facilitate testing oversight. All subsystem acceptance testing shall be satisfactorily completed by the Contractor before the initiation of the operational acceptance and training periods.

Testing shall provide verification and documentation that all requirements as defined in the Contract Documents are met. Test plans shall be developed by the Contractor to provide a mechanism that ensures that all contract requirements have been tested successfully and verified.

The final detailed test plans shall be submitted no less than thirty (30) days prior to the beginning of testing for Department approval.

If any deviations or changes to the approved Test Plan arise, they shall be resubmitted for review and approval by the TSMO Project Manager no less than fourteen (14) calendar days prior to any planned test activity stage. No tests shall be conducted until NHDOT has approved the test plan.

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A summary of all tests shall be produced at the completion of each testing phase of the project to ensure that all requirements defined by the system are satisfied.

Testing of the equipment and system shall include and be completed in the following order:

**A. Factory Acceptance Test**

The Contractor is responsible for testing all ITS devices and equipment to be supplied and shall be conducted to determine conformance to all design, materials, and performance requirements as specified in the Contract Documents for the particular component. The factory acceptance tests shall be performed at the equipment manufacturer's facility or at an independent testing laboratory. Factory acceptance testing may include material testing at pre-cast concrete plants, at steel fabrication facilities, and at other off-site manufacturing sites as required by the Department. NHDOT has the sole authority to require attendance and participation in the factory acceptance test process. The equipment to be tested and installed shall be new and produced within six (6) months of the test date. Test results shall be packaged and submitted to NHDOT within one week of test completion. NHDOT may, at their sole discretion, waive this requirement for certain equipment selected by the Contractor.

**B. Stand-Alone Test**

Testing performed after the field installation, but before connection with the rest of the system. The test shall exercise all stand-alone (non-network) functional operations of the equipment installed and demonstrate compliance with the functional requirements defined in the High Level Design Document and all applicable standards. If a unit fails to pass its stand-alone test, the Contractor shall correct the problem or replace the unit and retest it until satisfactory results are achieved. Test results shall be packaged and submitted to NHDOT within one week of test completion.

**C. Subsystem Test**

All subsystems furnished by the Contractor shall be subject to monitoring and testing to determine conformance with all applicable requirements and to ensure proper operation of the FEET Corridor ATMS. As part of this project, the Contractor shall furnish documentation that demonstrates component performance and operation in conformance to the RFP. For existing devices that have been modified with a new communication system, the Contractor shall be responsible for testing the new communication subsystem components but will not be held responsible for the standalone operation of the existing hardware. The Contractor shall supply all equipment required for conducting tests.

NHDOT reserves the right to examine and test (independent QA testing) any or all materials furnished by the Contractor for the project to determine if they meet the requirements specified within this RFP and also meet NHDOT Standard Specifications.

If NHDOT decides that any material used in the construction of this project is defective or otherwise unsuitable, and the workmanship does not conform to the design or specifications of this contract, the Contractor shall replace such defective parts and material at no cost to the Department.

The times and dates of the tests will be approved by the TSMO Project Manager. The

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Contractor shall conduct all tests in the presence of the TSMO Project Manager or designee. Testing shall take place only on weekdays, which are official working days of the State, unless the Project Manager allows the test to be conducted and/or continued on weekends and non-working days. The Contractor shall make a request in writing no less than fourteen (14) days prior to the proposed testing, and schedule tests only if permission is granted by NHDOT in writing. The Contractor shall be responsible for the conduct and documentation of the results of these tests that will be countersigned by the NHDOT representative at the end of each test. The signature of the NHDOT representative implies only proof of presence. Test results shall be packaged and submitted to NHDOT within one week of test completion.

**D. Central Control Test**

All central control and monitoring equipment shall be tested at the TMC on the Contractor-supplied hardware in isolation from the NHDOT network and the Statewide ATMS. Testing will be coordinated with NHDOT through the TSMO Project Manager.

The tests shall include, but not be limited to:

- Verification that all interconnecting cable installations, monitors, network equipment and equipment controllers are in accordance with the specifications.
- Display of video outputs from each new CCTV to verify operation within specified requirements;
- Display of each camera image from the new CCTVs on the Contractor-supplied workstation at the TMC to verify proper operation;
- Setup, selection and display of available preset positions for each new CCTV;
- Control of each new DMS and modified PCMS, including display of library messages, immediate messages, and test patterns;
- Display of each new DMS and modified PCMS status, including message currently displayed;
- Display of each MVDS status and operation
- Display of RWIS status and operation through new communications system; and
- Verification that database parameters and IP addressing for new devices were properly entered to allow communications between the TMC workstation and the new field devices.
- Upon completion of the test, the Contractor shall provide the TSMO Project Manager with the vendor software license and the software Administrator User Name(s) and Password(s) for Department use.
- Upon completion of the test, the Contractor shall provide the TSMO Project Manager with each device's Administrator User Name(s) and Password(s) for Department use.

**E. Nighttime Test**

A central control test for CCTV cameras shall be performed in the evening during dusk hours and nighttime hours to verify the proper operation of auto iris feature and nighttime

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visibility of the CCTV cameras. The test shall be conducted in the presence of the TSMO Project Manager or designee. The CCTV camera nighttime testing shall include the following minimum steps:

- Display camera video image on a NTSC color monitor at the TMC;
- Perform all remote control functions to verify CCTV camera auto iris functionality while observing the brightest and darkest scenes at the camera location;
- Vehicle headlights shall be visible without blooming, streaking and video glare to the satisfaction of the TSMO Project Manager or designee; and
- Perform a video recording and provide the recording to the TSMO Project Manager after completion of the Nighttime Test.

**F. MVDS Validation Testing**

Upon successful completion of the stand-alone test, the subsystem test and the central control test for the MVDS devices, the Contractor shall conduct validation testing. Validation testing shall show that the speed, volume and occupancy data reported by the devices is within the project tolerance for the speed, volume and occupancy as measured at the field site. This test shall be repeated for each MVDS device.

**G. Substantial Completion**

Substantial Completion shall be granted after written approval from the TSMO Project Manager that all Factory Acceptance, Stand-Alone, Subsystem, Central Control, Nighttime, and MVDS Validation Tests have been completed to the satisfaction of NHDOT.

**H. Operational Acceptance Test Period**

A thirty (30) day Operational Acceptance Test Period will be required for the Project. The Operational Acceptance Test Period shall commence upon Substantial Completion and shall run for thirty (30) consecutive days. The Operational Acceptance Test shall demonstrate that all the subsystems are properly installed, are free from problems, exhibit stable and reliable performance, and comply with the Contract Documents. The NHDOT TMC will operate all ITS devices during the Operational Acceptance Test Period and report any failures to the TSMO Project Manager, as defined by the approved test plans developed by the Contractor. The NHDOT may also repeat the MVDS Validation Testing during the Operational Acceptance Test Period to verify that the results continue to be within the approved threshold. In the event of a failure, the problem will be reported to the Contractor. The failure shall be corrected and the test shall then be restarted for another thirty (30) days.

**I. Integration Central Control Test**

The second round of central control testing will be coordinated with SwRI through the TSMO Project Manager following the integration of the FEET Corridor ATMS equipment into the Statewide ATMS.

The integration central control test shall include, but not be limited to:

- Verification that database parameters and IP addressing for new devices were properly entered to allow communications between the SwRI ATMS and the new field devices;

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- Display of video outputs and camera images from each new CCTV to verify operation within specified requirements on the Milestone Video Management System;
- Control of each new DMS and modified PCMS, including display of library messages, immediate messages, and test patterns;
- Display of each new DMS and modified PCMS status, including message currently displayed through the New England Compass ATMS;
- Display of each MVDS status and operation through the New England Compass ATMS; and
- Display of RWIS status and operation through the New England Compass ATMS.

**J. Final System Acceptance**

Final System Acceptance of the project shall be issued upon satisfactory completion of the Operational Acceptance Test, the Integration Central Control Test, and any required Training. The project will be inspected and issued a written Final System Acceptance upon approval and verification by the TSMO Project Manager that the project requirements have met 100 percent of the full intent of this Scope of Services.

**2.6 TRAINING**

The Contractor will develop and submit for review and approval a Training Plan. The Training Plan will include the identification of all training modules (including proposed training time and sequence) and materials (manuals, workbooks, training material). Subsequent to the approval of the Training Plan, the Contractor will be responsible for the development of the training program and for conducting training.

The Training Program shall include, at a minimum:

- A multi-level training program to enable employees to manage, operate, maintain, repair, update and reconfigure all hardware and software systems delivered under this project, including the following modules:
  - System Administrator/Supervisor/DBA Training (expected participation – seven (7) individuals) – to include operating and configuring all subsystems, calibrating systems, defining maintenance schedules and procedures, maintaining documentation and configuration control, identification and recovery from faults, etc.
  - Operator Training (expected participation – twelve (12) individuals) – to include operation of the CCTV subsystem, MVDS subsystem, operation of the DMS subsystem, recognizing fault alarms within the subsystems, etc. Operator Training may require up to two sessions to capture training of operators working different shifts.
  - Maintenance Training (expected participation – five (5) individuals) – to include instruction on all preventive maintenance requirements for each subsystem,

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analysis, troubleshooting and repair of all field device and control equipment, wireless communication equipment functionality and diagnostics, etc.

- The training program shall include, but not be limited to, startup and shutdown, safety precautions, programming, calibration, testing, cleaning, configuration changes, and module removal and replacement.
- Training on vendor software and firmware shall include information on all current versions and describe how the software and hardware systems interface.
- Training is to be in-person with hands-on training modules with the field devices, as appropriate.
- The Contractor shall provide comprehensive instructor guides, lesson plans and student workbooks for all training modules.

The Contractor may utilize vendor or manufacturer supplied training programs and materials that are thoroughly customized to the specific requirements and equipment deployed in this project.

The Training Plan shall be presented for review and approval to NHDOT prior to any training activities. The Contractor shall provide NHDOT no less than 21 calendar days' notice of the initiation of Training activities in order to facilitate Training oversight. Training may be initiated by the Contractor following Substantial Completion of the project and prior to Final System Acceptance.

**2.6.1 Optional System Maintenance Training**

The Contractor shall provide a separate unit bid price to conduct a one-week training course (to focus on field maintenance activities) to be conducted during the final week of the Operations and Maintenance Period. This System Maintenance Training is intended to be a hands-on demonstration for NHDOT maintenance personnel to understand the system components and the preventative maintenance activities and requirements. It is anticipated that this training would occur in the field at ITS equipment site locations during a preventative/routine maintenance round. NHDOT, at its sole discretion, may contract for this training at the price provided in the Cost Proposal, either as a change order to the contract or as an independent new contract.

**2.7 SYSTEM MAINTENANCE AND WARRANTY**

Following Final System Acceptance, the operation of the FEET Corridor ATMS will be the responsibility of NHDOT. The Contractor shall provide System Maintenance and Warranty support to NHDOT for a minimum period of twenty-four (24) months after Final System Acceptance. The NHDOT at its sole discretion may extend the System Maintenance and Warranty period for up to three additional 12 month terms at the price provided in the Cost Proposal.

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**2.7.1 System Maintenance**

The Contractor-performed maintenance shall include all parts and labor to support all field equipment, communications systems and TMC-installed equipment. The following maintenance activities shall be performed during the maintenance period:

- The Contractor shall populate the Statewide ATMS database with relevant equipment information, including, but not limited to: device IDs, serial numbers, device configurations and settings, subcomponents, preventative maintenance requirements, warranty information, maintenance provider contact information, as well as additional information required to maintain all equipment and devices procured under this project.
- The Contractor shall provide a recommended maintenance checklist for all field equipment, the communications system and the TMC-installed equipment.
- The Contractor shall conduct quarterly preventive maintenance on all subsystems and components, including diagnostic tests and site inspections to determine that all equipment and software elements are performing correctly. These inspections shall include the cleaning of camera domes. The Contractor shall perform corrective maintenance to replace worn or defective components, replace malfunctioning equipment modules and reset or reprogram defective system controllers and computers.

All equipment failures/malfunctions shall be addressed/remedied within the following schedule:

- Subsystem Failures – defined as a failure within an individual device or field subsystem (such as the loss of a camera, MVDS or DMS)
  - On-site response during the morning of the next workday (Monday-Friday excluding holidays).
  - Twenty-four (24) hour repair from arrival on-site.
  - Forty-eight (48) hour failure report (identifying failure/response) submission from arrival on-site.
- Significant Failures – defined as those failures that impact NHDOT's ability to view/control a number of field subsystems (such as a failure of the wireless communications backhaul or a backhaul hub).
  - Four (4) hour on-site response.
  - Twenty-four (24) hour repair from arrival on-site
  - Forty-eight (48) hour failure report (identifying failure/response) submission

The Contractor shall keep a record of all maintenance activities and identify any types of equipment or devices that are experiencing higher than expected failure rates and take corrective action. The Contractor shall submit individual monthly maintenance activity

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reports as well as a monthly report documenting system failures/malfunctions and the remedies and corrective actions taken to correct the failures/malfunctions. These reports shall be submitted electronically to the TSMO Project Manager and/or designees. There shall be no additional compensation for “false alerts”.

**2.7.1.1 Spare Parts Inventory**

The Contractor shall provide the following new spare parts to NHDOT at the conclusion of the Operations and Maintenance period, as extended by NHDOT:

- DMS: (1 controller; LED modules sufficient to display five 9X5 pixel characters; two LED power supplies; one Hub UPS)
- CCTV: (1 set of electronic devices contained in CCTV subsystem; NTSC video monitor for field testing)
- MVDS: (1 set of electronic devices contained in MVDS subsystem)
- Communications - HUBs: (electronic devices contained in one HUB, including a Hub UPS and microwave antenna)
- Communications CCTV site: (electronics, including antennas, contained in one CCTV site)
- Communications MVDS site: (electronics, including antennas, contained in one MVDS site)
- Communications – field device: (electronics, including antennas, contained in one DMS site)
- Environmentally hardened laptop computer, meeting New Hampshire Department of Information Technology (DoIT) Standards with vendor software for ITS devices for field maintenance activities (see Appendix C for additional details).

**2.7.1.2 Spare Controller Inventory**

The Contractor shall provide NHDOT one spare DMS, MVDS, and CCTV controller at the initial delivery of each subsystem to aid the integration into the SwRI New England Compass ATMS, by others. These controllers are in addition to the controllers identified in **Section 2.7.1.1 Spare Parts Inventory** and shall become the property of NHDOT upon delivery. These controllers shall be covered by the maintenance and warranty requirements detailed in **Section 2.7.1: System Maintenance** and **Section 2.7.2: System Warranty Support** of this RFP from the time of delivery to NHDOT until the conclusion of the System Maintenance period.

**2.7.2 System Warranty Support**

The Contractor shall provide a twenty-four (24) month warranty period (including all parts and labor) for all equipment and material, to begin at the start of the maintenance period, and extend through its end. This warranty shall include the Contractor’s general obligation to warrant all work, material and equipment included in the FEET Corridor

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ATMS Project, as well as individual warranties obtained from all equipment manufacturers and vendors.

The Contractor shall agree to maintain, repair, and correct deficiencies in the system hardware, firmware, and vendor software, including but not limited to the individual modules or functions during the Warranty Period, at no additional cost to NHDOT including without limitation, correcting all errors, defects and deficiencies; integrating vendor software updates, and replacing incorrect documentation, defective hardware or deficient software.

**2.7.3 Maintenance Training of NHDOT Personnel**

The Contractor shall coordinate all scheduled maintenance activities with the TSMO Project Manager or designee. This shall include 48 hour advanced notice to the TSMO Project Manager for scheduled preventative maintenance activities to permit NHDOT maintenance personnel to accompany the Contractor for the purposes of “hands-on” training.

**2.7.4 Extended System Maintenance and Warranty Support**

The Contractor shall provide separate prices for providing Maintenance Support and System Warranty Support in addition to the twenty-four (24) month support included in the base contract. The optional support agreements will be structured as three (3), twelve (12) month extensions. The terms of **Section 2.7.1: System Maintenance** and **Section 2.7.2: System Warranty Support** shall apply to the extended Maintenance and Warranty Support.

**3.0 SUBMISSION REQUIREMENTS**

**3.1 PROPOSAL SUBMISSION, DEADLINE, AND LOCATION INSTRUCTIONS**

Proposals submitted in response to this RFP shall be received by the New Hampshire Department of Transportation, Bureau of Transportation Systems Management and Operations (TSMO) no later than the time and date specified in **Section 1.1: Schedule of Events** or as amended by Addendum. Proposals shall be addressed to (NOTE: not a US mail address):

State of New Hampshire  
c/o Susan Soucie, PE  
TSMO Project Manager  
Department of Transportation  
Bureau of Transportation Systems Management and Operations  
110 Smokey Bear Boulevard  
Concord, New Hampshire 03301

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Cartons containing Proposals shall be clearly labeled as follows:

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION

RESPONSE TO FEET CORRIDOR ATMS PROJECT

Late submissions will not be accepted and will be returned to the sender unopened. Delivery of the Proposals shall be at the Contractor's expense. The time of receipt shall be considered when a Proposal has been officially documented by the Department of Transportation, in accordance with its established policies, as having been received at the location designated above. The Department of Transportation accepts no responsibility for mislabeled mail. Any and all damage that may occur due to shipping shall be the Contractor's responsibility.

All Proposals submitted in response to this RFP shall consist of one (1) original and thirteen (13) clearly identified copies of the Proposal, including all required attachments, and be accompanied by a signed Transmittal Letter referenced in Appendix B-2 State of New Hampshire Proposal Transmittal Letter. The original and all copies shall be bound separately, delivered in sealed containers, and permanently marked as indicated above.

Cost Proposals, one (1) original and thirteen (13) clearly identified copies, shall be packaged separately from the remainder of the Proposal and sealed. The original and all copies shall be bound separately, delivered in sealed containers, and permanently marked as indicated above.

The Proposal Transmittal Letter shall be signed by an official authorized to legally bind the Contractors and shall be marked "ORIGINAL." The Contractor's disclosure or distribution of its Proposal other than to the State of New Hampshire will be grounds for disqualification.

### **3.2 PROPOSAL INQUIRIES**

All inquiries concerning this RFP, including but not limited to, questions, requests for clarifications, or requests for change to the RFP, shall be made in writing, citing the RFP title, RFP number, Page, Section, and Paragraph and submitted to the RFP Point of Contact identified in **Section 1.3: Contact Information** of this RFP.

Contractors are encouraged to submit inquiries via e-mail; however, the State assumes no liability for assuring accurate/complete e-mail transmission/receipt and will not acknowledge receipt. The address listed above accepts deliveries only and is not a US mail address.

Inquiries shall be received by the State's RFP Point of Contact (see above) no later than the conclusion of the Contractor Inquiry Period (see **Section 1.1: Schedule of Events**). Written inquiries received later than the conclusion of the Contractor Inquiry Period shall not be considered properly submitted and will not be considered.

The State's final response to Contractors' inquiries raised during the Contractor Inquiry Period and during the Mandatory Contractor Conference, will be e-mailed by the date specified as the

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Final State Responses to Contractor Inquiries as specified in **Section 1.1: Schedule of Events**. However, this date may be subject to change at the State's discretion. The State may consolidate and/or paraphrase questions for sufficiency and clarity. The State may, at its discretion, amend this RFP on its own initiative or in response to issues raised by inquiries, as it deems appropriate. Oral statements, representations, clarifications or modifications concerning the RFP will not be binding upon the State. Official responses will be made in writing.

### **3.3 MANDATORY CONTRACTOR CONFERENCE**

A **Mandatory** Contractor Conference, as identified in **Section 1.1: Schedule of Events**, will be held at the following location:

NH Department of Transportation  
7 Hazen Drive, Room 114  
Concord, New Hampshire 03301

All Contractors that intend to submit Proposals shall have at least one person representing the Contractor attend the Mandatory Contractor Conference. Contractors are requested to RSVP via e-mail to the TSMO Project Manager by the date identified in **Section 1.1: Schedule of Events**, indicating the number of individuals who will attend the Contractor Conference.

Contractors will have an opportunity to ask questions about the RFP and the Department will make a reasonable attempt to answer questions it deems appropriate. Inquiries may include, without limitation, a request for clarification of the RFP; a request for changes to the RFP; suggestions or changes to the RFP that could improve the RFP competition or lower the offered price; and to review any applicable documentation.

Contractors are encouraged to submit written inquiries no less than twenty-four (24) hours prior to the Contractor Conference. No responses will be given prior to the Contractor Conference. Oral answers will not be binding on the State. Contractors are responsible for any and all costs associated with attending the Contractor Conference.

### **3.4 LETTER OF INTENT**

Contractors who intend to submit a Proposal to this RFP shall provide the following **Mandatory Letter of Intent to Bid** form (refer to following page) to the RFP Point of Contact (see Section 1.3) no later than 4:00 PM EST, on the date specified in **Section 1.1: Schedule of Events**. The prime member of a Contractor team or both parties of a joint venture for consideration should submit the letter of intent. The letter of intent may be sent via US Mail to the following address:

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

State of New Hampshire  
c/o Susan Soucie, PE  
TSMO Project Manager  
Department of Transportation  
Bureau of Transportation Systems Management and Operations  
PO Box 483  
Concord, New Hampshire 03302-0483

The Contractor may elect to submit the signed Letter of Intent as a PDF by email to the FEET Corridor ATMS Project Manager at [SSoucie@dot.state.nh.us](mailto:SSoucie@dot.state.nh.us).

The Department assumes no responsibility for delays caused by the U.S. Postal Service or other delivery methods the Contractor chooses for the Letter of Intent or any other Contractor communication concerning this RFP. The Department intends to issue official inquiry responses and Contractor Conference notes to Contractors who submit a **Mandatory Letter of Intent to Bid**.

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**Mandatory Letter of Intent to Bid**

**FREDERICK E. EVERETT TURNPIKE (FEET) CORRIDOR ATMS PROJECT**

REQUEST FOR PROPOSALS FOR A  
CONTRACTOR

Department of Transportation

RFP DOT 2016-10

**MANDATORY BIDDER LETTER OF INTENT TO BID**

[To ensure that all bidders receive notice of all amendments and responses to technical questions, firms intending to bid **shall** submit this **Letter of Intent to Bid** no later than 4:00 pm EST on the date defined in Section 1.1: *Schedule of Events*. Failure to deliver this form will disqualify any prime bidder. If a bidder submits a proposal without having properly submitted this form in a timely manner, the proposal will be returned unopened. The **Letter of Intent to Bid**, signed by an authorized representative of the Contractor, may be sent by US Postal Service, registered or express mail or as a PDF emailed to the TSMO Project Manager. The Department will not be responsible for delivery errors by third parties.]

FIRM \_\_\_\_\_

FIRM FEIN \_\_\_\_\_

ADDRESS \_\_\_\_\_

NAME & TITLE OF CONTACT PERSON \_\_\_\_\_

CONTACT TELEPHONE \_\_\_\_\_

CONTACT FAX \_\_\_\_\_

CONTACT EMAIL \_\_\_\_\_

\_\_\_\_\_  
SIGNATURE OF PERSON AUTHORIZED TO COMMIT THE FIRM

PRINT NAME & TITLE \_\_\_\_\_

The New Hampshire Department of Transportation will not be responsible for failure to notify potential bidders who fail to properly submit this form or provide inaccurate contact information. Bidders are also encouraged to monitor the Administrative Services Web site for timely updates at [http://www.admin.state.nh.us/purchasing/bids\\_posteddte.asp](http://www.admin.state.nh.us/purchasing/bids_posteddte.asp)

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**3.4.1 Revoking Letter of Intent**

A Contractor may revoke its Letter of Intent in writing at any time before the deadline for Proposal submission. No reimbursement of costs will be provided for any actions taken up to the revocation of the Letter of Intent.

**3.5 ALTERATION OF RFP**

The original RFP document is on file with the State of New Hampshire, Department of Transportation. Contractors are provided an electronic version of the Request for Proposal (RFP). Any alteration to this RFP or any file associated with this RFP is prohibited. Any such changes will result in a Proposal being rejected.

**3.6 RFP AMENDMENT**

The Department reserves the right to amend this RFP at its discretion, prior to the Proposal submission deadline. In the event of an amendment to this RFP, the Department, at its sole discretion, may extend the Proposal submission deadline, as it deems appropriate.

**3.7 NON-COLLUSION**

The Contractor's signature on a Proposal submitted in response to this RFP guarantees that the prices, terms and conditions, and services quoted have been established without collusion with other Contractors and without effort to preclude the Department from obtaining the best possible competitive proposal.

**3.8 MULTIPLE PROPOSALS**

The Prime Contractor or any party of a joint venture may not submit or be included on more than one proposal in response to this RFP. For example, the prime contractor on one proposal may not also be a sub-contractor on another proposal. However, a sub-contractor on one proposal may be the sub-contractor on any other proposal.

**3.9 VALIDITY OF PROPOSAL**

Proposals submitted shall be valid for one hundred and eighty (180) days following the deadline for submission of Proposals in **Section 1.1: Schedule of Events**, or until the effective date of any resulting Contract, whichever is later.

**3.10 PROPERTY OF STATE**

All material received in response to this RFP will become the property of the Department and will not be returned to the Contractor. Regardless of the Contractor selected, the Department reserves the right to use any information presented in any submitted Proposal.

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**3.11 CONFIDENTIALITY OF A PROPOSAL**

A Proposal will remain confidential until the effective date of any resulting Contract as a result of this RFP. The Contractor's disclosure or distribution of Proposals other than to the State of New Hampshire will be grounds for disqualification.

**3.12 PUBLIC DISCLOSURE**

Subject to applicable law or regulations, the content of each Contractor's Proposal will become public information upon the effective date of any resulting contract.

**3.13 NON-COMMITMENT**

Notwithstanding any other provision of this RFP, this RFP does not commit the State to award a Contract. The State reserves the right, at its sole discretion, to reject any and all Proposals, or any portions thereof, at any time; to cancel this RFP; and to solicit new Proposals under a new acquisition process.

**3.14 PROPOSAL PREPARATION COSTS**

By submitting a Proposal, a Contractor agrees that in no event shall the State be either responsible for or held liable for any costs incurred by a Contractor in the preparation of or in connection with the Proposal, or for work performed prior to the Effective Date of a resulting Contract.

**3.15 ORAL PRESENTATIONS AND DISCUSSIONS**

The State may require Contractors to make an oral presentation of their Proposal and/or make available for oral presentations/interviews the staff proposed for the project. Any and all costs associated with this oral presentation shall be borne entirely by the Contractor. Invitations for presentations will be sent out, if necessary per **Section 1.1 Schedule of Events**.

**3.16 REQUIRED CONTRACT TERMS AND CONDITIONS**

By submitting a Proposal, the Contractor agrees that the Federal and State of New Hampshire Terms and Conditions, contained in **Section 5.0: General Contract and Project Requirements** and **Appendix D: State of New Hampshire Terms and Conditions** shall form the basis of any contract resulting from this RFP. In the event of any conflict between the State's Terms and Conditions and any portion of the Contractor's Proposal, the Federal and State Terms and Conditions shall take precedence and supersede any and all such conflicting terms and conditions contained in the Contractor's Proposal.

**3.17 AWARD**

The Department plans to execute a Contract, administered by NHDOT for the FEET Corridor ATMS Project, based on the selected Contractor's proposal, as a result of this RFP. The

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Department also reserves the right, at its discretion, to award a Contract by item, part or portion of an item, group of items, or total Proposal.

If a Contract is awarded, the Contractor shall obtain written consent from the State before any public announcement or news release is issued pertaining to any Contract award. Such permission, at a minimum, will be contingent upon approval of the Contract by Governor and Executive Council of the State of New Hampshire.

**3.18 MINIMUM STANDARDS FOR PROPOSAL CONSIDERATION**

The State seeks proven, experienced ITS Contractors to work with Department personnel in accordance with the requirements of Appendix C: High Level Design Document.

The minimum standards for proposal consideration include:

- Contractor has submitted the Mandatory Intent to Bid form to NHDOT before the deadline indicated.
- Attendance at the Mandatory Contractor Conference identified in **Section 1.1: Schedule of Events**.
- The Proposal submitted on time, as defined in this RFP in **Section 1.1: Schedule of Events**.
- Inclusion of the properly completed Transmittal Form Letter contained in Appendix B-2: State of New Hampshire Proposal Transmittal Form Letter of this RFP.
- Compliance with requirements in Appendix C: High Level Design Document.

**3.19 PROPOSAL FORMAT**

Proposals shall be formatted as follows:

- A Proposal shall be provided in a three-ring binder.
- A Proposal shall be printed on white paper with dimensions of 8.5 by 11 inches with one inch minimum margins.
- A Proposal shall use Arial font with a minimum size of eleven (11) points (excluding tables and graphics).
- A Proposal shall adhere to a maximum page limit of 70 single-sided pages in response to this RFP. Items cited to be included in the Proposal Response Appendix (supplementary materials described in Section 3.20.6), the proposal cover, transmittal letter, table of contents, tabs and glossary ***shall not count*** toward the 70 page limit. Please note the appendix is limited to 50 pages, excluding general specifications sheets for major equipment as described in Section 3.20.6.

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- Each page of a Proposal shall include a [page number] of [total pages] and identification of the Contractor in the page footer.
- Tabs shall separate each Section of the Proposal.
- Exceptions for paper and font sizes are permissible for graphical exhibits, which may be printed on white paper with dimensions of 11 by 17 inches; and material in Appendices.
- The Cost and Price Proposal shall be bound and sealed separately from the remainder of the proposal. ***This section shall count towards the 70 page proposal limit.*** Therefore, the pages of the Cost and Price Proposal shall be numbered in a manner similar to the rest of the Contractor's proposal (i.e. with page number and number of total pages).

### **3.20 PROPOSAL ORGANIZATION**

The Contractor Proposals shall be submitted in the format outlined below. To be considered, the proposal shall respond to all requirements in this part of the RFP. The required sections of the proposal are:

1. Proposal Cover
2. Transmittal Form Letter (Included for reference in Appendix B-2)
3. Table of Contents
4. Glossary of Terms and Abbreviations in Proposal
5. Section 1: Statement of Project Need
6. Section 2: Corporate Qualifications
7. Section 3: Management Summary
8. Section 4: Work Plan
9. Section 5: Cost Proposal (shall be bound separately from the rest of the Proposal)
10. Appendix: Additional Information

The requirements for each Proposal section are detailed within this RFP. The requirements include information that shall be included in each proposal response section and shall count toward the 70 page limit, as well as supplemental information that shall be included in the proposal Appendix that shall not count toward the 70 page limit (but shall be subject to the Appendix 50 page limit).

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**3.20.1 Section 1: Statement of Project Need**

State in succinct terms an understanding of the project need and the services required by this RFP.

**3.20.2 Section 2: Corporate Qualifications**

Identify the proposed Contractor's team, including anticipated subcontractors/subconsultants, as well as the role of each firm on the project. Identify the Geotechnical Consultant identified in **Section 5: General Contract and Project Requirements** and all Disadvantaged Business Enterprise (DBE) and Minority/Women-Owned Business Enterprise (M/WBE) team members. Describe the major business areas of the leading firms. Provide a high-level description of the firm's organization and staff size. Discuss the firm's commitment to the public sector and experience with this type of project implementation. Also include a statement regarding the financial ability of the Contractor's Team to undertake a project of this size – including bonding responsibility and capabilities.

The Contractor's response shall document the requisite knowledge, experience, and ability to satisfactorily perform the radio/wireless design, fiber optic connectivity, equipment deployment, and system commissioning associated with the Scope of Work. The response shall also demonstrate that the firm has in the past, or is presently, performing generally similar work.

The Contractor shall also provide evidence of experience with DMS support structure and sign installation, civil site preparation and installation of typical ITS field devices, equipment enclosures and cabinets, and experience with the coordination of work with multiple adjacent highway construction contractors.

**Previous Experience**

Include a more detailed summary of experience in similar efforts of this type, scope and duration. Provide descriptions of no more than five (5) similar projects completed in the last five (5) years. Experience shown should be work done by individuals who will be assigned to this project as well as that of your company/organization; identify which specific team members have worked on each of these sample projects. Each project description shall include:

- An overview of the project covering type of client, objective, project scope, role of the firm and outcome;
- Project measures including proposed cost, actual project cost, proposed project schedule and actual project schedule;
- Names and contact information (name, title, address and current telephone number) for one or two references from the client; and

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- Detail any experience of the Contractor's team members working together.

It is anticipated that this previous experience will include no less than three (3) ITS projects involving microwave communications system elements as well as both design and construction experience within the same project.

**Existing Commitments**

List existing workload and other contracted commitments of the Contractor and subcontractors.

**Litigation and Citations**

Identify any litigation filed by clients of all Contractor firms during the last ten (10) years.

Discuss the Contractor's environmental record. List any citations from NHDES, EPA, or other environmental regulatory agencies against the Contractor and subcontractors. Discuss the citations, the current status and outcomes (if available).

**3.20.3 Section 3: Management Summary**

Identify the location of the Contractor's design and construction project offices (may be the same).

Assign and identify Key Personnel, including the proposed Project Manager who will be the Department's primary Point of Contact throughout the project. One of the Key Personnel shall be identified as the Emergency Contact, with contact information that will be available to the Department 24 hours per day, 7 days per week for the design and construction phases of the project. At a minimum, the Contractor's Key Personnel shall include:

- Project Manager – Responsible for the whole project and primary point of contact for the Department throughout the project
- Engineer of Record (shall be a PE licensed in NH) – Responsible for preparation of plans and specifications, and generally oversees the design phase of the project
- Geotechnical Engineer (shall be a PE licensed in NH) – Responsible for geotechnical engineering during design and construction
- Communications Engineer (shall be familiar with wireless and fiber optic communications systems) – Responsible for the overall design of the communications system
- Environmental Manager (shall be familiar with NHDOT and NHDES regulations and policies relative to construction operations) – Responsible for developing the Environmental Study, Request for Project Review, and any required environmental permit applications. If the Environmental Manager is not the

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Certified Wetland Scientist mentioned in Section 2.4, the Contractor shall also identify the proposed Certified Wetland Scientist.

- Construction Supervisor (or Superintendent) (shall be familiar with NHDOT Contract Administration and Construction Records) – Generally oversees the construction phase of the project
- Traffic Control Coordinator (shall be authorized to make adjustments and decisions related to temporary traffic controls) – Responsible for the traffic control layout and equipment throughout construction; will be the Turnpike’s first point of contact for work zone safety throughout construction.
- Public Information Officer (PIO) – Responsible for coordination with the Department’s Public Information Officer and responsible for managing the Contractor’s public involvement program as outlined in Section 5.20.

The Proposal may indicate such other Key Personnel as are appropriate to the Contractor’s Team. In addition to the listed Key Personnel, the team should include personnel and corporate experience with the following:

- Plan development, particularly for NHDOT;
- Systems Engineering Process;
- Microwave radio communications;
- Single mode fiber optic communications;
- Antenna and tower installation;
- FCC license applications; and
- Indicate the quantity of licensed New Hampshire Professional Engineers (PE).

The Department recognizes that some of the Key Personnel roles identified above may be tasked to one individual. For example, it is possible that the Project Manager will also be the Public Information Officer. If this is the case, the Contractor shall demonstrate that the individual has the skills and experience to handle the multiple roles as well as the ability to manage the multiple roles simultaneously as needed.

The Proposal shall include an organizational chart showing the number and names of executive and professional personnel, technical support, consultants, etc., who will be engaged in the work as well as the hierarchy of how they will interrelate, with lines of responsibility clearly identified. Explain where these personnel will be physically located during the time they are engaged in the work.

Resumes should be provided for all personnel on the organization chart. Include education backgrounds, total years of professional experience, and project experience in similar type of work. Indicate the responsibilities each will have in this project and how long each has been with each company/organization.

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**Project Management and Coordination**

Include information detailing the organization's managerial approach to support this project, relevant internal process tools that will be utilized during this effort and the scheduling approach and tools that will be utilized.

Address coordination between differing work locations (the Contractor's office(s), various NHDOT offices, etc.), subcontractors, and the project management controls to be used to ensure proper communications and work flow needed to maintain the project schedule and budget.

Discuss the Contractor's proposed issue escalation process, including the identification of relevant personnel. This process shall be compliant with the NHDOT Issue Escalation Process defined in **Section 5.25: Design Issues Escalation and Conflict Resolution**, and **Section 5.26: Construction Clarification, Conflict Resolution**.

Include information detailing the organization's relevant Quality Assurance/Quality Control program, specifically the approach to the Quality Management Plan (QMP) and Construction Quality Control Plan identified in **Section 5.21: Quality Management Plan (QMP)**.

Discuss the Contractor team's performance in job safety including the approach to managing safety requirements, past performance on construction projects, or any citations by OSHA for safety violations. Discuss the citations, the current status and outcomes (if available).

**3.20.4 Section 4: Work Plan**

Describe the work plan for designing and deploying the FEET Corridor ATMS Project. The work plan shall contain the following five sections:

1. Technical Approach
2. Communications Systems Design, Deployment and Licensing
3. Innovative Aspects/Value Engineering
4. Phasing of Equipment Turnover to NHDOT
5. Project Schedule

**Technical Approach**

Detail your approach for addressing all Scope of Work requirements described in **Section 2.0: Scope of Work** and further described in **Section 5.0: General Contract and Project Requirements**. This narrative shall include the Contractor's approach, following the Systems Engineering Process, to address:

- System Design (Civil and Electronics elements);

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- System Construction and Installation;
- Integration and Acceptance Testing;
- Training;
- Maintenance Activities and continuing Operations and Maintenance access; and
- Security Plan.

Modifications to **Section 2.0: Scope of Work** are permitted; however, reasons for changes shall be fully explained. Identify anticipated NHDOT resources (including NHDOT staff level of effort) required to implement the Work Plan. If more than one approach is apparent, comment on why this approach is being selected.

Detail your approach for managing construction activities, including construction engineering and inspection activities, maintenance of traffic (MOT) and system integration.

NHDOT does not anticipate the need for unique software development within this procurement. Identify all legal agreements that NHDOT will enter into which involve third parties for the use or modification of any specialized or proprietary software. NHDOT will not be responsible for any third party licensing fees until formal acceptance of the FEET Corridor ATMS.

**Communications Subsystem Design, Deployment and Licensing**

NHDOT desires to optimize a communications subsystem design that reduces communications system tower heights and provides communications redundancy. Potential approaches may include the use of commercial communications towers and additional (repeater) facilities.

- Provide an overview of the proposed Wireless Communications subsystems approach including the following:
  - System design;
  - Network topography;
  - Network management system;
  - Line-of-sight transmission path requirements;
  - Reliability;
  - Scalability;
  - Redundancy;
  - Fault tolerance; and
  - Identify any anticipated recurring costs, including licensing, leases, and utility costs.

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- Provide an overview of the proposed connectivity of the proposed wireless communications subsystem to the existing and proposed ITS devices.
- Provide an overview of the proposed connectivity of the proposed wireless communications subsystem to the State's existing fiber optic communications system.
- Provide an overview of the analysis, procedures and process to be utilized to secure all required FCC licenses required to operate the proposed Communications Systems.

**Innovative Aspects/ Value Engineering Change Proposals by the Contractor**

- Identify and detail any areas where the Contractor proposes to provide enhanced functionality or innovative features above that identified in Appendix C: High Level Design Document.
- Identify any additional ITS devices or hardware that the Contractor proposes to include above and beyond the equipment identified in Appendix F: FEET Preliminary (30%) Design Plans for the proposed system design and the benefit of the additional equipment to the overall project.
- Identify potential project risks and describe any processes, or systems that the Contractor will implement that reduce project risk to NHDOT in the areas of Design, Construction, Operations and Maintenance.
- Identify potential project processes, or systems that the Contractor will implement that reduce projected project duration or provide early turnover of systems to NHDOT.
- Include any innovative aspect/ value engineering cost impacts in the **Cost and Price Analysis** identified in **Section 3.20.5**.

All innovative aspects shall be identified separately as such in the Proposal Submission.

An innovative aspect shall not include revisions to specifications, standards or established Department policies. Innovation should be limited to Contractor's means and methods, approach to project, use of new products, new uses for established products, etc. Modifications to the layout of field equipment included in the plans issued with the RFP are not considered to be an "innovative aspect". The price proposal shall reflect the layout of field equipment included in the plans issued with this RFP.

**Phasing of Equipment Turnover to NHDOT**

NHDOT desires to bring FEET Corridor ATMS Project ITS devices on-line and in service as soon as practical, in order to provide effective traffic monitoring and mitigation along the FEET corridor.

Identify within the project schedule any phasing of ITS field equipment and system turnover to NHDOT to provide NHDOT with early operational control of ITS equipment along the FEET corridor. Early operational control is defined as control of subsystems

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prior to System Acceptance. Include any maintenance support services (including response times) that will be provided to NHDOT to support any field equipment turned over to NHDOT prior to System Acceptance.

**Project Schedule**

Provide a proposed project schedule that depicts at what phase the Contractor intends to build each element/phase of the project. The Contractor’s project schedule shall conform to the requirements of **Section 5.18: Project Schedule**. Events shall reflect the elements identified in the proposed technical approach and shall be reflective of the systems engineering process identified in the RFP **Section 2.0: Scope of Work**.

The minimum information to be included in the summary Construction Project Management (CPM) schedule of anticipated major activities, deliverables and milestones and their associated phasing is as follows:

**Table 2: Major Activities/Deliverables/Milestones**

ID	ACTIVITIES/DELIVERABLES /MILESTONES
1	Project Kick Off Meeting
2	DLFR Delivery
	DLFR Document
	Expanded Traceability Matrix
3	NHDOT Review period for DLFR
4	Revisions and Final Approval of DLFR
5	PSD Kickoff Meeting
6	PSD Development and Delivery
	Camera Video
	FCC Licensing – Engineering Study
	60% Design Plans
	Structural Calculations
	Communications System Build-out Analysis
	Subsystems Diagrams and Documentation
	TMC Installation Plans
	Subsystem Test Plans
	Updated Traceability Matrix
	Maintenance Access Plan
	Security Plan
	Leasing Agreements
	Integration Specifications and Documentation
	Environmental Study
	Historical Resources Request for Project Review (RPR)
7	Equipment Submittals
8	NHDOT Review period for PSD Submittals
9	Revisions and Final Approval of PSD
10	DSD Kickoff Meeting
11	DSD Development
	FCC Licensing – License Application
	100% Ready for Construction Plans

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ID	ACTIVITIES/DELIVERABLES /MILESTONES
	Subsystem Diagrams and Documentation
	Final TMC Install Plans
	Revised Subsystem Test Plans
	Updated Traceability Matrix
	Final Field Installation Plans
	Construction Site Plans
	Updates to ITS Project Architecture
	Updated Security Plan
	Final Maintenance Access Plan
	Final Leasing Agreements
	Final Environmental Study
	Permit Applications
12	NHDOT Review Period for DSD Submittals
13	Revisions and Final Approval of DSD
14	Equipment /Infrastructure Installation
	CCTV Subsystem
	DMS Subsystem
	MVDS Subsystem
	Communications Subsystem
	TMC Central Control Subsystem
	TMC Workstation Delivery and Set-up; Laptop Delivery
15	Spare Parts Delivery
16	Subsystem Testing
	Factory Acceptance Tests
	Stand-Alone Tests
	Subsystem Tests (including testing of RWIS and PCMS)
	Central Control Test
	Nighttime Test
	MVDS Validation Tests
17	Substantial Completion of Construction
18	Operational Acceptance Test
19	System Integration to Statewide ATMS
20	Integration Central Control Test
21	Training
22	Final System Acceptance
23	24-Month System Maintenance and Warranty Period

In developing the project schedule, the Contractor shall assume a 17 working day NHDOT response period for each project submittal.

The Department will not be obligated to reimburse the Contractor for delays in the estimated Notice-to-Proceed date, NHDOT submittal reviews, or submittal reviews/approvals from outside entities.

NHDOT anticipates the project duration to be a maximum of eighteen (18) months from Notice to Proceed to Final System Acceptance. Maintenance activities will extend the project for a time period of twenty-four (24) months. Depending on NHDOT exercising the option to extend maintenance and warranty options, the maintenance could be extended for up to three (3) additional periods of twelve (12) months each.

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**3.20.5 Section 5: Cost and Price Analysis**

This portion of the proposal shall be bound and sealed separately from the remainder of the proposal. The FEET Corridor ATMS Project is a Firm Fixed Price contract. Individual Unit Costs for bid items are to be provided as identified in Appendix E: FEET Corridor ATMS Project Bid Items.

The Contractor's price proposal shall include:

- Unit Costs for individual bid items that NHDOT has described in **Section 1.8 ITS and Communications Subsystem Project Elements** and Appendix F: FEET Preliminary Concept (30%) Plan Set.
- Unit Costs for Connection of Existing NHDOT ITS Devices as described in **Section 1.9 Connection of Existing NHDOT ITS Devices**.
- Unit Cost for the 24-month mandatory maintenance and warranty period.
- Unit Cost for each of the three subsequent 12-month optional maintenance and warranty periods.
- Unit Cost for the Optional System Maintenance Training.
- Individual Value Engineering cost reductions detailed in **Section 3.20.4** that NHDOT, at its own discretion, may accept. Identify these items on the Bid Items Form contained in Appendix E: FEET Corridor ATMS Project Bid Items.

Note that the unit prices contained in each bid item for **Sections 1-3** of Appendix E: FEET Corridor ATMS Project Bid Items shall be all inclusive, but not be limited to: spectrum licensing, project management, equipment procurement, ancillary equipment, transport, installation, utilities, temporary traffic control – including police details, warranty, and delivery of all required project documentation.

**Section 4 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all modifications and upgrades to the existing ITS subsystems as indicated in the plans and RFP.

**Section 5 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all design, licensing, equipment procurement, coordination, ancillary equipment, installation, utilities, and temporary traffic control – including police details necessary to establish a complete, functional communications system for the project. This communications system will include both the wireless and fiber optic segments.

**Section 6 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all design and engineering fees for the project.

**Section 7 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all integration and subsystem testing fees to develop test plans, conduct System Acceptance Testing as indicated in Section 2.5, integrate the FEET Corridor ATMS into the New England Compass ATMS, and subsequent Integration Central Control Testing.

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**Section 8 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all labor, classroom and hands-on materials, and equipment necessary to conduct the training as detailed in Section 2.6 Training.

**Section 9 of Appendix E: FEET Corridor ATMS Project Bid Items** shall include all labor, tools, equipment, materials, hardware – including replacement equipment, and expendable items necessary to conduct preventative, routine, and emergency maintenance and warranty support on the FEET Corridor ATMS. This item shall also include the cost to provide the spare parts inventory and spare controller inventory as detailed in Sections 2.7.1.1 and 2.7.1.2.

Contractor payment milestones shall be based on the payment schedule identified in **Table 3: Payment Schedule** below. The Contractor may request additional payment milestones; however, the cumulative payments shall not exceed the amount indicated at the milestones shown in Table 3.

**Table 3: Payment Schedule**

RFP Section Reference	ACTIVITIES/DELIVERABLES /MILESTONES	PAYMENT SCHEDULE (%)
	Project Kick Off Meeting	
	DLFR Delivery	
2.2.2	DLFR Document	
2.2.2	Expanded Traceability Matrix	
2.2	Revisions and Final Approval of DLFR	Cumulative not to exceed 1%
	PSD Kickoff Meeting	
	PSD Development and Delivery	
2.3.1.1	Camera Video	
2.3.1.1	FCC Licensing – Engineering Study	
2.3.1.1.1	60% Design Plans	
2.3.1.1	Structural Calculations	
2.3.1.1	Communications System Build-out Analysis	
2.3.1.1	Subsystems Diagrams and Documentation	
2.3.1.1	TMC Installation Plans	
2.3.1.1	Subsystem Test Plans	
2.3.1.1	Updated Traceability Matrix	
2.3.1.1	Maintenance Access Plan	
2.3.1.1	Security Plan	
2.3.1.1	Leasing Agreements	
2.3.1.1	Integration Specifications and Documentation	
2.3.1.1	Environmental Study	
2.3.1.1	Historical Resources Request for Project Review	
2.3.1.1.2	Equipment Submittals	
2.3.1	Revisions and Final Approval of PSD	Cumulative not to exceed 12%
	DSD Kickoff Meeting	
	DSD Development	
2.3.2.1	FCC Licensing – License Application	
2.3.2.1	100% Ready for Construction Plans	
2.3.2.1	Subsystem Diagrams and Documentation	
2.3.2.1	Final TMC Install Plans	

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RFP Section Reference	ACTIVITIES/DELIVERABLES /MILESTONES	PAYMENT SCHEDULE (%)
2.3.2.1	Revised Subsystem Test Plans	
2.3.2.1	Updated Traceability Matrix	
2.3.2.1	Final Field Installation Plans	
2.3.2.1	Construction Site Plans	
2.3.2.1	Updates to ITS Project Architecture	
2.3.2.1	Updated Security Plan	
2.3.2.1	Final Maintenance Access Plan	
2.3.2.1	Final Leasing Agreements	
2.3.2.1	Final Environmental Study	
2.3.2.1	Permit Applications	
2.3.2	Revisions and Final Approval of DSD	Cumulative not to exceed 25%
	Equipment /Infrastructure Installation	
	CCTV Subsystem	
	DMS Subsystem	
	MVDS Subsystem	
	Communications Subsystem	
	TMC Central Control Subsystem	
	TMC Workstation and Laptop Delivery; Set-up	
2.5	Subsystem Testing	
2.5A	Factory Acceptance Tests	
2.5B	Stand-Alone Tests	Cumulative not to exceed 75%
2.5C	Subsystem Tests (including testing of RWIS and PCMS)	
2.5D	Central Control Test	
2.5E	Nighttime Test	
2.5F	MVDS Validation Tests	
2.5G	Substantial Completion of Construction	Cumulative not to exceed 88%
2.5H	Operational Acceptance Test	Cumulative not to exceed 90%
2.6	Training	
5.34	Integration with Statewide ATMS	3% minimum
2.5I	Integration Central Control Testing	
2.5J	Final System Acceptance	Cumulative not to exceed 95%
2.7	System Maintenance and Warranty (2-years)	1/24 monthly payments of unit cost
2.7.1.1	Spare Parts Delivery	0.5% minimum
2.7.3	Optional System Maintenance Training (1 week)	Firm Fixed Price
2.7.4	Year Three (3) Maintenance	1/12 monthly payments
2.7.4	Year Four (4) Maintenance	1/12 monthly payments
2.7.4	Year Five (5) Maintenance	1/12 monthly payments

**3.20.6 Section 6: Appendix**

Any supplemental information thought to be relevant, but not applicable to the enumerated categories, shall be provided within the Appendix to the proposal. The Proposal Appendix shall be a maximum of 50 pages.

NHDOT may, at their discretion, consider this information in the response evaluation. The Appendix **shall not** count toward the 70 page proposal response limit.

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In addition, the Contractor shall provide a general specification sheet for each piece of major equipment proposed in the Work Plan, including all ITS devices and Communications Equipment. These specifications sheets will not count towards the 50 page Appendix page limit.

**4.0 SELECTION PROCESS AND EVALUATION CRITERIA**

**4.1 CRITERIA FOR SELECTION**

All proposals received from Contractors will be reviewed and evaluated by a committee of qualified personnel. The committee will recommend for selection the proposal which most closely meets the requirements of the RFP and satisfies NHDOT needs.

The Department will use a scoring scale of 100 points, which shall be applied to the proposal solution as a whole. Points will be distributed among five (5) factors: Project Need, Corporate Qualifications, Management Summary, Work Plan, and Cost Proposal.

The following areas of consideration will be used in making the selection. Refer to **Section 3.20: Proposal Organization** for detailed descriptions of the requirements for each of these selection criteria.

**Table 4: Proposal Categories and Points**

CATEGORIES	POINTS
TECHNICAL PROPOSAL with the following potential maximum scores for each Technical Proposal Category	70
Project Need	5
Corporate Qualifications: Previous Experience	10
Management Summary: Key Personnel Project Management and Coordination	20
Work Plan: Technical Approach Communication Systems Innovation and Value Engineering Ability to Meet Project Schedule System Maintenance and Warranty Approach	35
COST PROPOSAL POTENTIAL MAXIMUM POINTS	30
TOTAL POTENTIAL MAXIMUM POINTS AWARDED	100

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Some or all of the Contractors may be invited for an interview/presentation to clarify and expound upon information provided in the written Proposals.

**4.2 RIGHTS OF THE DEPARTMENT IN EVALUATING PROPOSALS**

The Department reserves the right to:

- Consider any source of information in evaluating Proposals;
- Omit any planned evaluation step if, in the Department's view, elimination of the evaluation step is in the best interest of the State for the proposal review;
- At its sole discretion, reject any and all Proposals at any time; and
- Open Contract discussions with the second highest scoring Contractor, if the Department is unable to reach an agreement on Contract terms with the highest scoring Contractor.

**4.3 PLANNED EVALUATION STEPS**

The Department plans to use the following process:

1. Initial screening;
2. Preliminary evaluation of the Proposals with reference and background checks;
3. Oral interviews and
4. Final evaluation of Proposals.

**4.3.1 Initial Screening**

The Department will conduct an initial screening step to verify the Contractor's compliance with submission requirements and to confirm that the Proposal satisfies the following:

- The Proposal is date and time stamped as received by the Department before the deadline.
- Submission requirements are addressed in **Section 3.0: Submission Requirements**.
- Minimum standards are met as defined in Section 3.18: Minimum Standards for Proposal Consideration.
- Agreement to the State of New Hampshire Terms and Conditions, Contract and Project Requirements and the provisions as defined in the RFP without exception.

A Proposal that fails to satisfy either submission requirements or minimum standards may be rejected without further consideration.

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**4.3.2 Preliminary Evaluation of Proposals and Reference and Background Checks**

The Department has established an evaluation team comprised of members of the Bureaus of Highway Design, Bureau of Turnpikes, Department of Information Technology and the Bureau of Transportation Systems Management and Operations (TSMO) to evaluate proposals, conduct reference checks, and conduct background checks as required. Additional information about background checks may be found in Sections 5.4 and 5.7.

**4.3.3 Oral Interviews**

The Department may request Contractors to make an oral presentation of their Proposal and/or make available for oral presentations/interviews the Key Personnel proposed for the project. A structured agenda will be used for oral interviews to ensure standard coverage of each invited Contractor. Information gained from these oral interviews will be used to refine scores assigned from the initial review of the Proposals.

**4.3.4 Final Evaluation**

The Department will conduct final evaluations as a culmination of the entire process of reviewing Contractor Proposals and information gathering. The final evaluation may include any or all information gathered from the Proposal review, background and reference checks and oral interviews. It is the Department's intent to offer a contract to the Contractor with the highest overall scores.

**4.4 PROPOSAL EVALUATIONS**

The Department will select a Contractor based upon the criteria and standards contained in this RFP and from applying the weightings in this section. Oral interviews and reference checks will be used to refine and finalize preliminary scores.

**4.4.1 Calculation of Technical Scores**

In the Technical Evaluation Contractors will be evaluated based on the criteria outlined in the following sections. Evaluator scores based on the potential maximum of 70 points will be added together for a Technical point total for each Contractor and then the Technical points will be divided by the number of evaluators to determine the Technical Score for each Contractor.

The minimum acceptable Technical Score will be fifty (50) points out the possible total of 70 points. Any proposals that do not receive a Technical Score of fifty (50) or higher will be removed from further consideration and the corresponding Price Proposal will not be opened.

**4.4.2 Scoring of the Proposed FEET Corridor ATMS System Design and Technical Approach**

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The FEET Corridor ATMS System Design and Technical Approach evaluation will focus on:

- Design of the System/Solution to meet the specified requirements: including the documentation of the proposed System Design and approach to work; demonstration of a logical and thorough approach to design and development; and thoroughness in addressing System requirements.
- System Performance and Reliability: Proposed system performance and actual documented performance of installed systems on similar projects; and where, applicable use of components and systems proven in operation on other projects.
- Evidence of willingness to exceed project requirements.
- Ability to work and perform in a multi-solution, multi-contractor environment such as the NHDOT Turnpike environment and to cooperate with other contractors in the development and implementation of necessary system interfaces.

**4.4.3 Scoring of Contractor’s Communication System Design, Deployment and Licensing**

When evaluating the Contractor’s Communication System, the evaluation will focus on:

- Design of the communications system using both wireless and fiber optic communications media.
- Ability to work with and integrate legacy equipment into the Contractor’s proposed solution.
- System Capacity: Has the Contractor demonstrated that their proposed solution will work for the proposed equipment and all expansion as indicated in the FEET Deployment Plan? Is there evidence that the system is designed to grow with future device deployments?
- Understanding of the FCC licensing requirements for wireless communications.

**4.4.4 Scoring of Contractor’s Innovations and Value Engineering**

When evaluating the Contractor’s Innovations and Value Engineering, the evaluation will focus on:

- Department’s interest in the innovations that the Contractor presents.
- Department’s estimated value of the Value Engineering alternative(s).
- Ability to maximize the number of devices that can be deployed as part of this project, to include additional devices shown in the Deployment Plan but not currently included in this RFP.
- Innovations that improve the longevity or simplify the maintenance of the proposed equipment.

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**4.4.5 Scoring of Contractor’s Ability to Execute and Meet the Project Schedule**

When evaluating the Contractors’ Ability to Execute and Meet the Project Schedule the evaluation will focus on:

- Demonstration of ability to meet or exceed the scheduling requirements of the Project.
- Demonstration of ability to implement the System safely and with a minimum disruption to the traveling public.
- Contractors shall present a feasible and comprehensive Project Plan that addresses the program requirements within the prescribed timeframe. Focus shall be on:
  - Demonstration of plan for coordination with the civil site contractor.
  - Logic, clarity and specificity of work plan.
  - Logical approach to Project phasing and transition.

**4.4.6 Scoring of Contractor’s System Maintenance and Warranty**

When evaluating the Contractor’s System Maintenance and Warranty Approach the evaluation will center on:

- Demonstration of ability to meet or exceed all maintenance services and warranty requirements as specified in **Section 2.7 System Maintenance and Warranty**.
- Demonstration of innovation in the approach to Maintenance will be evaluated. Innovation means providing materials, operating efficiencies, and equipment that will reduce the long-term Maintenance and operating expenses of the Project and enhance System performance and equipment component life.
- Maintenance Coordination – Demonstrated ability and willingness to maintain Contractor’s System and to coordinate the delivery of maintenance services in a manner that benefits the Agency.
- Demonstrated serviceability of components and the overall System. Serviceability is defined as the ease with which maintainers can remove, replace and repair components with a goal of minimizing maintenance of traffic requirements, System and component downtime and resultant costs and to maintain and monitor the System and allow the Agency to monitor and potentially maintain the System in a manner that benefits the Agency.

**4.4.7 Scoring of Contractor’s Qualification, Project Team, Capabilities and References**

When evaluating the Contractor’s Qualification, Project Team, Capabilities and References the evaluation will center on:

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- Evidence of experience with projects (including design, implementation, and maintenance) of similar size and nature.
- Evidence of commitment of key members on this Project relative to other commitments and the local presence commitment.
- Demonstrated relevant experience of the project manager, task managers and other key personnel.
- Comparability of key personnel role in example projects provided to their role on this Project.
- Positive references based on reference checks and subsequent follow-up by the Department.
- Experience, technical competence and role of Subcontractors, including but not limited to Subcontractors' prior working relationships with the Contractor.

**4.4.8 Calculation of the Price Proposal Score**

The Contractor's Price Proposal will be allocated a maximum potential score of 30 points. The Department will consider the costs of the system design, construction and the subsequent twenty-four month maintenance costs, as well as the value of the Value Engineering Cost Reductions identified in **Appendix E: FEET Corridor ATMS Project Bid Items**. The basis for the Price Proposal evaluation will be the Total Project Costs from the Price Proposal consisting of all bid items with the exception of the optional items:

- Value Engineering Cost Reductions (Options 1-3)
- Optional One Week System Maintenance Training
- Year Three Maintenance and Warranty Support
- Year Four Maintenance and Warranty Support
- Year Five Maintenance and Warranty Support

Cost information required in a Proposal is intended to provide a sound basis for comparing costs.

The following formula will be used to assign points for costs:

$$\text{Contractor's Price Score} = \frac{\text{Lowest Proposed Price}}{\text{Contractor's Total Project Costs}} \times 30$$

(rounded to the nearest 0.5 points)

For the purpose of use of this formula, the lowest proposed price is defined as the lowest price proposed by a Contractor who has scored 50 or higher on the Technical Score.

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**4.5 CONTRACTOR SELECTION**

Each Proposal will be evaluated and considered with regard to the services and equipment proposed, qualifications of the Contractor and any Subcontractors, experience and qualifications of proposed personnel and cost to construct.

The Department will issue an Intent to Award letter to a Contractor based on these evaluations. Should the Department be unable to reach agreement with the Contractor after 60 days of negotiations during Contract discussions, the Department may then undertake Contract discussions with the second preferred Contractor, and so on. Such discussions may continue at the sole option of the Department, until an agreement is reached, or all proposals are rejected.

**5.0 GENERAL CONTRACT AND PROJECT REQUIREMENTS**

**5.1 STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS AND CONTRACT AND PROJECT REQUIREMENTS**

The Contract requirements set forth in **Section 5.0: General Contract and Project Requirements**, herein and **Appendix D: State of New Hampshire Terms and Conditions** will constitute the basis for any contract resulting from this RFP.

**5.2 STATE CONTRACTS**

The State of New Hampshire reserves the right to use, wherever possible, existing statewide software and hardware contracts to acquire supporting software and hardware.

**5.3 CONTRACTOR RESPONSIBILITIES**

The Contractor shall be solely responsible for meeting all requirements and terms and conditions specified in this RFP, the Contractor's Proposal, and any resulting contract, regardless of whether or not it proposes to use any Subcontractor.

The Contractor may subcontract services subject to the RFP, including but not limited to, the terms and conditions in **Section 5.0: General Contract and Project Requirements** herein. The Contractor shall submit with its Proposal all information and documentation relating to the Subcontractors necessary to fully respond to the RFP, which shall include terms and conditions consistent with this RFP. The Department will consider the Contractor to be the sole point of contact with regard to all contractual matters, including payment of any and all charges resulting from any Contract.

**5.4 CONTRACTOR'S PROJECT OFFICE AND STAFF**

In the Proposal, the Contractor shall identify the location of the Contractor's design and construction project offices (which may be the same site).

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In the Proposal, the Contractor shall assign proposed staff in accordance with the Schedule, and the requirements and Deliverables of **Appendix C: High Level Design Document**.

Any changes to the Contractor's staff, including the use of Subcontractors, after the submittal of the Proposal shall be submitted in writing to the FEET Corridor ATMS Project Manager and shall be subject to Department approval. Replacement staff shall have comparable or greater skills with regard to performance of the work as the staff being replaced and be subject to the provisions of this RFP and any resulting Contract. Department approvals for changes to the Contractor's staff, including Subcontractors, will not be unreasonably withheld.

Notwithstanding any provision in this RFP, or any resulting Contract to the contrary, the Department shall have the option to terminate the Contract, at its discretion, if the Department is dissatisfied with the Contractor's staffing. The Department reserves the right to require removal or reassignment of the Contractor's staff if found unacceptable to the Department.

The Department may conduct reference and background checks on the Contractor's staff. The Department reserves the right to reject the Contractor's staff as a result of such reference checks.

**5.4.1 Contractor's Project Manager**

In the Proposal, the Contractor shall assign and identify a Project Manager and other Key Personnel.

The Project Manager shall have full authority to make binding decisions under the Contract, and shall function as the Contractor's representative for all administrative and management matters. The Project Manager shall be available to promptly respond during normal working hours within two (2) hours to inquiries from the Department, and be at a Project Site as needed. The Project Manager shall use his or her best efforts on the Project. The Project Manager shall be qualified to perform the obligations required of the position under the Contract.

The Contractor's selection of a Project Manager will be subject to the prior written approval of the FEET Corridor ATMS Project Manager. The approval process may include, at the Department's discretion, review of the proposed Project Manager's resume and qualifications, reference and background checks, and an interview. The Department reserves the right to require removal or reassignment of a Project Manager found unacceptable to the Department.

Any changes of the Project Manager shall require prior written justification submitted by the Contractor, and prior written approval of the FEET Corridor ATMS Project Manager. Department approvals for replacement of the Project Manager will not be unreasonably withheld. The replacement Project Manager shall have comparable or greater skills than the Project Manager being replaced, and subject to the provisions of this RFP and any resulting Contract.

**5.4.2 Contractor's Key Personnel**

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In the Proposal, the Contractor shall assign and identify “Key Personnel” (Project Manager and key Project Staff). Any changes to the Contractor’s Project Staff shall require the prior written justification submitted by the Contractor, and prior written approval of the FEET Corridor ATMS Project Manager. Department approvals for changes in the Project Staff will not be unreasonably withheld. Replacement Project Staff shall have comparable or greater skills with regard to performance of the Project as the staff being replaced and subject to the provisions of this RFP and any resulting Contract.

**5.5 WORK PLAN/PROJECT SCHEDULE**

The Contractor shall submit a proposed Work Plan in the Proposal. This Work Plan shall constitute the initial Work Plan for the Contract, which shall include, without limitation, a detailed description of the schedule, tasks, deliverables, critical events, task dependencies, and payment schedule, prior to approval of the Contract (based upon the submitted schedule/work plan identified in **Section 3.20.4: Section 4: Work Plan**). In the event of failure of the parties to agree upon the initial Work Plan and/or of the Department to approve the initial Work Plan, the Department, at its sole discretion, may invoke its right to reject the Contractor and discontinue the execution of the Contract, as applicable. Neither party shall be liable to the other for termination due to the failure to agree upon a Work Plan prior to a Contract effective date.

The Contractor shall update the Work Plan as necessary, no less than every month, to accurately reflect the status of the Project schedule, tasks, deliverables, critical events, task dependencies, and payment schedule. Any updates to the Work Plan shall require prior written approval from the FEET Corridor ATMS Project Manager. Unless otherwise agreed in writing by the Department, changes to the Work Plan shall not relieve the Contractor from liability to the State for any damages resulting from the Contractor’s failure to perform its obligations under the Contract, including without limitation, in accordance with the schedule.

In the event of a delay in the schedule, the Contractor shall immediately notify the FEET Corridor ATMS Project Manager in writing. The written notification will identify the nature of the delay, i.e., specific actions or inactions of the Contractor or Department causing the problem; its estimated duration period to reconciliation; specific actions that need to be taken to correct the problem; and the expected schedule impact on the Project. In the event that additional time is required by the Contractor to correct deficiencies, the Schedule shall not change unless previously agreed to in writing by the Department. In the event of a delay in the Schedule that is not the fault of the Contractor, the Schedule shall automatically extend on a day-to-day basis to the extent that the delay is not the result of the Contractor not fulfilling its obligations under the Contract.

Liquidated damages shall apply to this contract in accordance with Section 100 of the New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction, which are incorporated by reference and available at <http://www.nh.gov/dot/business/engineers.htm>.

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**5.6 INSURANCE AND RISK MANAGEMENT**

Prior to Contract award the Contractor shall indicate methods of complying with the liability and insurance requirements of the State of New Hampshire Terms and Conditions.

**5.7 NHDOT TRANSPORTATION MANAGEMENT CENTER (TMC)/ NHDOS INCIDENT PLANNING & OPERATIONS CENTER (IPOC) FACILITIES ACTIVITIES**

The Contractor will be required to submit to security measures for access to the NHDOT TMC to conduct the FEET Corridor ATMS Project installation and acceptance testing in a manner that minimizes disruption to operations.

**NHDOT Escort**

The Contractor and any Subcontractor will require a NHDOT TMC escort for all on-site (TMC) activities. The escort will arrange access to the facility through the New Hampshire Department of Safety (NHDOS) and monitor contractor activities for each entry to the TMC workspace. NHDOT will provide this escort at no fee to the Contractor for activities that will occur during normal business hours (defined as 8:15 am to 4:15 pm Monday-Friday, non-holidays). The Contractor will provide as much advanced notice as feasible but in no case shall notice be served less than two business days to the TSMO Project Manager for the provisioning of an escort. This notification shall include the following information:

- Description of proposed work activity
- Identification of the proposed activity start/stop times
- Identification of all personnel involved in the proposed activity

For activities that will occur outside of normal business hours, the Contractor will provide not less than four business days notification to NHDOT for the provisioning of an escort. The notification will include the information defined for the normal business hours escort as well as a justification for conducting this activity outside of normal business hours.

NHDOT reserves the right to deny an escort or deny facility access to the Contractor / project Subcontractors due to staff availability or disruption of NHDOS Operations. The Contractor shall not be compensated by NHDOT for any interruption of activities due to staff availability or disruption of NHDOS Operations.

**NHDOS Operations at the Incident Planning & Operations Center (IPOC)**

All on-site activities of the Contractor and any Subcontractor shall be performed in a manner that minimizes disruption to NHDOS Operations. The Contractor Project Manager will be required to submit a detailed work plan to NHDOT for approval detailing how the Contractor proposes to conduct activities that may have a significant impact on NHDOS Operations.

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The work plan shall be submitted no less than fourteen (14) calendar days prior to the initiation of activities. NHDOT reserves the right to modify the work plan and/or deny facility access to the Contractor/project Subcontractors due to disruption of NHDOS Operations. NHDOT reserves the right to direct the Contractor/project Subcontractors to cease work activities due to an unforeseen disruption of NHDOS Operations. The Contractor shall not be compensated by the NHDOT for the modification of work plans, failure to allow facility access, or ceasing of work activities.

**Criminal Record Request**

All personnel (Contractor and any Subcontractors) who will participate in any TMC on-site activities will be required to submit to a Criminal Record Request or “background check”. The results of this check for each person requiring on-site access shall be submitted by the Contractor Project Manager to the TSMO Project Manager for approval no less than fourteen (14) calendar days prior to any scheduled or unscheduled on-site activities.

NHDOT reserves the right to deny facility access to the Contractor/project Subcontractor personnel based on the results of the background check or changes to the criminal record of Contractor personnel. The Contractor shall not file a claim against the NHDOT for failure to provide facility access.

Information and application forms for a Criminal Record Request are available on the NHDOS website:

<http://www.state.nh.us/safety/divisions/nhsp/ssb/crimrecords/>

The New Hampshire Department of Safety contact for a background check is:

New Hampshire Department of Safety  
DIVISION OF STATE POLICE  
Support Services Bureau  
Criminal Records Unit  
33 Hazen Drive, Concord, NH 03305  
Open Monday-Friday; 8:15 am to 4:15 pm

An applicant shall have the following documents for the Criminal Record Request: Photo ID (current driver’s license, non-driver’s license, or passport); a completed Criminal Record Release Authorization Form (Sections 1 and 2); and the required payment.

The NHDOT reserves the right to suspend the activities of the identified Contractor employees until the required security clearance is obtained. All costs associated with the acquisition of a security clearance shall be assumed by the Contractor.

**5.8 CONSTRUCTION COORDINATION**

During the construction phase of the FEET Corridor ATMS Project, Contractor will be asked to coordinate their efforts with other planned NHDOT projects that are currently under design and may also be under construction during the construction phase of the FEET Corridor ATMS Project. These existing projects include, but are not limited to, open road tolling (ORT)

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conversion, rest area plaza reconstruction, roadway maintenance work, bridge rehabilitation or reconstruction of FEET structures, bridge rehabilitation or reconstruction of structures over FEET, full bridge replacements, highway realignment and reconstruction, road resurfacing, and signal construction.

NHDOT reserves the right to direct the Contractor/project Subcontractors to cease or alter work activities due to construction activity conflicts. The Contractor shall not be compensated by the NHDOT for the modification of work plans or cessation of activities.

Several of the proposed equipment locations for the FEET Corridor ATMS Project are within the limits for existing or proposed NHDOT and Turnpike construction projects. Several of these projects will create significant changes to the existing conditions along FEET. Therefore, work within these project areas shall be coordinated with the NHDOT Project Manager during design and throughout construction. The following list includes most of the major projects that will be active from Fall 2015 through Summer 2017. This list may not be all inclusive and it will be the Contractor's responsibility to determine if additional projects are created during the term of this contract. Points of contact for these projects will be made available to the Contractor as needed.

- Manchester 14966 – I-293 Exit 4 Interchange, Replacement of Five Red List Bridges
- Nashua-Merrimack-Bedford 13761 – FEET Widening, Exit 8 to I-293/NH 101 Interchange
- Bedford-Merrimack 16100 – Open Road Tolling at Bedford Toll Plaza
- Hooksett 29494 – I-93 Hooksett Toll Plaza Access Road over Ramp C Bridge Deck Replacement
- FEET Annual Maintenance Program Projects

### **5.9 INITIATION OF THE MAINTENANCE AND WARRANTY SUPPORT PERIOD**

Promptly after Final System Acceptance, the Contractor shall submit a request to NHDOT for initiation of the System Maintenance and Warranty Support Period. Upon written authorization with a specific start date indicated, the payment of any monies due the Contractor for substantial completion of the work identified in the Project Scope of Work shall be authorized.

The Contractor shall initiate the System Maintenance and Warranty efforts detailed in **Section 2.7.1: System Maintenance** and **Section 2.7.2: System Warranty Support** of this RFP. The System Maintenance and Warranty Support Periods shall extend for twenty-four months, unless NHDOT initiates the extended Maintenance and/or Warranty Support efforts identified in the RFP. NHDOT may initiate the additional maintenance training option detailed in **Section 2.6.3: Optional Maintenance Training of NHDOT Personnel**.

NHDOT will release the Performance Bond at the initiation of the Maintenance and Warranty Period.

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**5.10 SYSTEM WARRANTY**

The Contractor shall warrant that the System shall operate and conform to the specifications, terms, and requirements of the Contract, including but not limited to all subsystem elements, i.e., the hardware, firmware, software, communications, and any interfaces.

**5.10.1 Software**

The Contractor shall warrant that the Software, including but not limited to the individual modules or functions furnished under the Contract, is properly functioning for all equipment within the System, compliant with the requirements of the Contract, and will operate in accordance with the specifications. The State of New Hampshire shall be the registered licensee of all software procured for execution of the Project. The Contractor shall provide software upgrade protection for the duration of the warranty and maintenance period.

**5.10.2 Licenses**

The Contractor shall warrant that the licenses for non-software products, including but not limited to the Milestone licenses for CCTV equipment, are up to date and registered to the State of New Hampshire. If any licenses expire or become obsolete through upgrades, the Contractor shall update and upgrade all pertinent licenses.

**5.10.3 Non-Infringement**

The Contractor shall warrant that it has good title or license to, or the right to allow the Department to use, all services, equipment, and software provided under the Contract, and that such services, equipment, and software do not violate or infringe any patent, trademark, copyright, trade name or other intellectual property rights or misappropriate a trade secret of any third party.

**5.10.4 Viruses; Destructive Programming**

The Contractor shall warrant that the software will not contain any viruses, destructive programming, or mechanisms designed to disrupt the performance of the software in accordance with the specifications.

**5.10.5 Compatibility**

The Contractor shall warrant that all subsystem components, including but not limited to the individual modules or functions, including any replacement or upgraded subsystem components provided by the Contractor to correct deficiencies, or as an enhancement for any system or device, shall operate with the rest of the System and software without loss of any functionality. All ITS devices provided shall be interoperable and compatible with the NHDOT New England Compass ATMS software provided by SwRI using compatible NTCIP standards.

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**5.10.6 Services**

The Contractor shall warrant that all services to be provided under the Contract will be provided in a professional manner in accordance with industry standards and that services will comply with professional performance standards.

**5.11 STRUCTURES PLANS**

Existing structure plans are available from the Bureau of Bridge Maintenance upon request. Design of new structures for this project shall be governed by the manuals indicated in **Section 1.6: *Additional Documents and Reference Materials.***

**5.12 GENERAL CIVIL PLANS**

All plans are to be prepared in accordance with the Department's Design Standards, Department's Standard Specifications, Department's Highway Design Manual, Department's Utility Accommodation Manual, other Department standards, policies, procedures, directions from NHDOT, and all incorporated herein and also available at DOT offices, etc. Refer to **Section 1.6: *Additional Documents and Reference Materials.***

All plans shall be accurate, legible, and complete in design, drawn to 50 scale as directed by the Department, and furnished in reproducible form.

The plans are site specific and intended to reflect the near-final design of ITS systems with all appurtenances. The plans shall reflect all existing detail, especially existing drainage and existing utilities. Known utilities within the project area are indicated in Appendix B-2.

All site plans shall contain erosion- and sedimentation-control features, other structures, right-of-way lines (existing and proposed), curbing, pavement layout, guardrail, final template plotted for a 200 foot distance upstream and downstream of each site location, any access management requirements and access path cross-sections necessary for access to sites, traffic control plans with construction phasing, drive locations, clearing-and-grubbing limits, and lighting and signal conduit. Operations and maintenance access roadways shall be a 10-foot wide gravel pathway, level, and adjacent to the ITS device or equipment that requires the access roadway.

Existing record plans may be obtained from NHDOT's GIS Project Viewer, available at <http://gis.dot.nh.gov/projectviewer/>. Contractor shall supplement this information with field investigations and Dig Safe reviews (see Section 2.4 for additional details).

**5.13 RIGHT OF WAY/UTILITY COORDINATION**

The Department has determined that there are project solutions that do not require the acquisition of Right of Way (ROW). If the Contractor's concept requires the acquisition of ROW, the Contractor shall be responsible for all legal and financial obligations necessitated by their concept. The Right of Way acquisition process shall adhere to the principles under State and Federal Laws and Regulations, with specific reference to 23 CFR part 710 and 49 CFR part 24,

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which may be accessed via the web site: <http://www.fhwa.dot.gov> as well as the current edition of the NHDOT Right of Way Manual.

As indicated in **Section 2.3.1: Preliminary System Design**, the Contractor shall be responsible for coordinating activities with local utilities. This coordination shall include meeting all local utility company requirements for utility service connections. The Contractor shall be responsible for all utility costs, including the cost associated with initiating utility service, and monthly costs until final system acceptance. Following final acceptance, the Contractor may work with the utility service provider to turn over the monthly billing for utility service to the TSMO Project Manager.

#### **5.14 GEOTECHNICAL SERVICES**

The Contractor will be responsible for identifying and performing all geotechnical investigations, analyses, design and constructability assessments dictated by the project needs. Design and analysis methods, construction control, quality assurance, and documentation shall be in accordance with the standard of practice, as supported by the Department's standard specifications, applicable AASHTO codes, and FHWA design manuals for the selected foundation system, and other sources as appropriate. The Contractor shall include a Geotechnical Engineer to provide geotechnical exploration, design and construction services. The Geotechnical Engineer shall have experience on device and sign structure foundations and installations, antenna tower construction, communications equipment infrastructure installation and highway construction standards.

The Contractor shall be responsible to perform the following:

- Evaluate existing subsurface information included within this proposal, and conduct additional explorations and testing as needed, to design and construct the selected foundation system and roadway. A minimum of one test boring per structure foundation (CCTV, overhead DMS, and stand-alone MVDS) shall be conducted to a depth sufficient to properly sample and characterize the soil/rock conditions around and below the foundation's zone of influence. The Geotechnical Engineer shall be on site for all test borings conducted by the Contractor. The Contractor's recommended sampling and testing plan shall be submitted at least ten (10) working days in advance of the exploration.
- The evaluation of the subsurface conditions shall be the full responsibility of the Contractor, and shall be sufficiently thorough to ensure that all geotechnical related aspects of the project are covered. The Contractor shall access subsurface exploration or field-testing locations through State-owned Right-of-Way unless the Contractor makes their own arrangements with private landowners for access through private property. Subsurface explorations and field testing shall be conducted with proper traffic control devices in place, as needed according to the Manual of Uniform Traffic Control Devices (MUTCD) and Department standards, and the work shall be conducted in compliance with Dig Safe and environmental regulations
- Foundation systems that could be evaluated by the Contractor might include, but are not limited to, the following systems: spread footings, spread footings with ground

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improvements, driven pile foundations with various pile types, drilled shafts, and drilled mini-piles.

- Provide to the Department geotechnical calculations, computer analysis results, laboratory and field test results, and subsurface information in accordance with the standard of practice that demonstrate the design basis of the selected foundation system, and the ability of the foundation to meet the performance criteria for the structure.
- Select the foundation construction method and provide construction control and documentation in accordance with the standard of practice. Where applicable, construction control and performance testing shall also be supported by geotechnical instrumentation. All field personnel responsible for construction control shall have experience with the foundation system that is selected, and shall report directly to the Geotechnical Engineer.
- For drilled shaft or mini-pile foundations, the Contractor shall prepare appropriate contract specifications outlining the Contractor qualifications and all foundation-specific construction requirements. The contract specifications shall be based on the Bureau of Materials and Research sample Section 509 special provision.
- All drilled shafts with a nominal depth of 12 feet or greater shall include crosshole sonic logging (CSL) testing in accordance with the sample Section 509 special provision. Where CSL testing is required, the Contractor shall incorporate four (4) access tubes using Schedule 40 steel pipe. The pipes shall be fitted with watertight caps at the top and bottom and be installed inside of and secured to the reinforcement cage vertical and parallel. For additional CSL testing requirements, see the sample Section 509 special provision. The Contractor shall notify the Department not less than three working days prior to conducting CSL testing to allow the Department to observe and/or conduct independent CSL testing.
- Prior to initiating any foundation construction or directional drilling, provide the Department with an Installation Plan that provides a complete description of the methods for construction and quality assurance, equipment, and all Subcontractors that will be involved in the foundation or directional drilling construction.
- The Geotechnical Engineer shall provide the Department with daily reports for each day of foundation and directional drilling construction, including the results of all foundation testing for that day, a description of any changes in the Installation Plan that were required, and all quality assurance testing for that day. At the completion of the foundation construction, provide a summary of the foundation construction and testing, which certifies that the foundation meets the project design requirements and criteria. At the completion of each directionally drilled conduit installation, provide a summary of the construction, indicating the location and depth of the conduit, including any changes to the intended conduit path.

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**5.15 ENVIRONMENTAL REQUIREMENTS**

**5.15.1 Storm Water Pollution Prevention Plan (SWPPP)**

The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP), if required, in accordance with the EPA's National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP). The CGP also requires the preparation and implementation of a SWPPP in accordance with the aforementioned statutes and regulations. The SWPPP will include the CGP conditions and detailed descriptions of controls of erosion and sedimentation to be implemented during construction. It is the responsibility of the Contractor to prepare the SWPPP to meet the requirements of the most recently issued CGP. The Contractor shall refer to the NHDOT Environmental Checklist found in Appendix B-6.

Detailed limits of the erosion control items shall be shown on the roadway plan sheets. This plan shall be submitted along with the Contractor's certification not less than 15 calendar days prior to beginning construction activities. The Notice of Intent (NOI) and Notice of Termination (NOT) shall also be submitted by the Contractor to the EPA with a copy sent to the Department.

The SWPPP shall be prepared in accordance with Section 107 of the NH Standard Specifications and all other State and Federal environmental regulations. The SWPPP documentation shall be submitted to the NHDOT and the New Hampshire Department of Environmental Services (NHDES) for review, comment, and concurrence only. The Contractor shall be the Approval Authority for the SWPPP and shall be fully responsible for the development, implementation, and monitoring of the SWPPP throughout construction.

**5.15.2 Permits**

All impacts within the jurisdiction of NHDES shall be addressed by submission of an applicable wetlands permit(s). Application and approval for the additional permit, including all costs associated with additional conditions, is the responsibility of the Contractor.

Any Wetland Dredge and Fill, Shoreland, or Alteration of Terrain permitting shall be prepared in accordance with NHDES specific regulations. Preparation of additional permit packages will be the responsibility of the Contractor. If any Agency rejects or denies the permit application, it is the Contractor's responsibility to make whatever changes are necessary to achieve an approved permit or modify the plans such that the permit application is no longer required.

The Contractor will be required to pay all permit fees. Any fines levied by permitting agencies shall be the responsibility of the Contractor.

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**5.15.3 Soil and Groundwater Contamination**

The Contractor is responsible for verifying that there is no soil or groundwater contamination present at any of the project sites prior to construction. In the event that suspected contaminated soil, groundwater, or other media are encountered during work based on visual, olfactory, or other evidence, the Contractor shall stop work in the vicinity of the suspect material and shall notify the TSMO Project Manager immediately so that the appropriate testing and subsequent action can be taken.

**5.16 ENVIRONMENTAL SERVICES/MITIGATION**

The Contractor will be responsible for preparing designs and proposing construction methods that are in accordance with all permits. If alterations to the permit are required, a submission shall be made to NHDOT prior to submitting to the appropriate permitting agency. The Contractor shall be responsible for making all changes to the application as required by the permitting agencies. The Contractor will be responsible for any additional permit fees. All permits will be acquired prior to commencing any construction. Delays due to incomplete permit packages, agency rejection, agency denials, agency processing time, or any permit violations, will be the responsibility of the Contractor, and will not be considered sufficient reason for time extension.

**5.17 VERIFICATION OF EXISTING AND PLANNED CONDITIONS**

The Contractor shall be responsible for verification of existing conditions and anticipated construction activities, including research of all existing Department records and other information.

By execution of the contract, the Contractor specifically acknowledges and agrees that the Contractor is contracting and being compensated for performing adequate investigations of existing site conditions sufficient to support the design developed by the Contractor and that any information being provided by the Department is merely to assist the Contractor in completing adequate site investigations. Notwithstanding any other provision in the Contract Documents to the contrary, no additional compensation will be paid in the event of any inaccuracies in the conceptual design and preliminary information.

**5.18 PROJECT SCHEDULE**

The Contractor shall submit a CPM project schedule in accordance with Article 108.03 of the NH Standard Specifications. The proposed schedule shall allow 17 working days for Department review of complete design submittals. The Contractor shall track progress of the schedule, on a monthly basis identifying critical needs to future progress and outstanding issues affecting the schedule. Revisions to the project schedule will require approval by NHDOT.

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**5.19 MEETINGS AND PROGRESS REPORTING**

The Contractor shall anticipate periodic meetings with Department personnel and other agencies as required for resolution of design and/or construction issues. These meetings may include:

- Department technical issue resolution
- Permit agency coordination
- Local government agency coordination
- Scoping meetings
- Field reviews
- Additional meetings as required to complete the project

During construction, the Contractor shall meet with the Department's Construction Contract Administrator (CA) on a weekly basis, at minimum, and provide a one-week preview for activities to be performed during the coming week. The coordination may be required to be performed on a daily basis during peak construction periods.

The Contractor shall, on a monthly basis, provide written progress reports that describe the items of concern and the work performed on each task.

**5.20 PUBLIC INVOLVEMENT**

Public involvement is an important aspect of the project. Public involvement includes communicating to all interested persons, groups, and government organizations any information regarding the development and construction of the project. The Contractor will continue to be part of the public involvement effort. One of the Key Personnel for the Contractor shall be a Public Information Officer (PIO). The PIO will coordinate public involvement with the Department's Public Information Office.

**5.20.1 Community Awareness**

Prior to beginning construction operations, the Department will issue a press release describing the intent of the work. The Contractor shall notify the Construction CA not less than ten (10) working days in advance of any work being done to allow the Department sufficient time to issue the press release.

**5.20.2 Public Meetings**

The Contractor shall provide all support necessary for the FEET Corridor ATMS Project Manager and Construction CA to hold various public meetings, which may include:

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- Public Information Meetings
- Preconstruction Meeting
- Meetings with elected and appointed officials
- Meetings with special interest groups (private groups, homeowners associations, environmental groups, minority groups, and individuals)

The Contractor shall include attendance by the PIO or other designee at not more than four (4) public/community meetings for the term of the contract to support the public involvement program.

For the meetings identified above, the Contractor shall provide all technical assistance, data, and information necessary for the FEET Corridor ATMS Project Manager and/or Construction CA to produce display boards, printed material, video graphics, computerized graphics, etc.

The Contractor shall attend the meetings with an appropriate number of their personnel to assist the Department's Construction CA. The Contractor shall forward all requests for public/community meetings to the FEET Corridor ATMS Project Manager/Construction CA. The Contractor shall inform the FEET Corridor ATMS Project Manager/Construction CA of any meetings with individuals that occur without prior notice.

**5.20.2.1 Public Workshops, Informational Meetings**

All legal/display ads announcing public meetings will be prepared and paid by the Department.

**5.20.2.2 Public Involvement Data**

The Contractor is responsible for the following:

- Coordinating with the FEET Corridor ATMS Project Manager / Construction CA. (NHDOT)
- Providing required expertise (staff members) to assist the Construction CA on an as-needed basis.
- Preparing computer generated graphics to depict the proposed improvements for coordination with the Department, local governments, and other agencies.

The collection of public input occurs throughout the life of the project and requires that the Contractor maintain files, newspaper clippings, letters, and especially direct contacts before, during, and after any of the public meetings. Articles such as those mentioned shall be provided for the use and records of the Construction CA.

In addition to collecting public input data, the Contractor may be asked by the Project Manager or Construction CA to prepare responses to any public inquiries as a result of the public involvement process. The Department shall review all responses prior to mailing.

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**5.21 QUALITY MANAGEMENT PLAN (QMP)**

**5.21.1 Design**

The Contractor shall be responsible for the professional quality, technical accuracy, and coordination of all surveys, designs, drawings, specifications, geotechnical work, concepts to avoid/minimize impacts to natural and cultural resources, and other services furnished by the Contractor under this contract.

The Contractor shall provide a Design Quality Management Plan, which describes the Quality Control (QC) procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. In addition the QMP shall establish a Quality Assurance (QA) program to confirm that the Quality Control procedures are followed. The Contractor shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The QMP may be one utilized by the Contractor as part of their normal operation or it may be one specifically designed for this project. The Contractor shall submit a QMP within twenty one (21) calendar days of the written Notice to Proceed. A marked up set of prints from the Quality Control review shall be included with each review submittal. The responsible professional engineers or professional surveyors that performed the Quality Control review, as well as the QA manager, will sign a statement certifying that the review was conducted.

The Contractor shall, without additional compensation, correct all errors or deficiencies in the surveys, designs, drawings, specifications, and/or other services.

Final signed and sealed component plans shall be delivered to the Department's Bureau of Turnpikes and Bureau of TSMO not less than twenty one (21) calendar days prior to construction or procurement associated with that component.

No fabrication, casting, or construction will occur until all related design review and shop drawing review comments are resolved.

**5.21.2 Construction**

The Contractor shall be responsible for developing and maintaining a Construction Quality Control Plan which describes their Quality Control procedures to verify, check, and maintain control of key construction processes and materials.

The sampling, testing, and reporting of all materials used shall be in compliance with the NHDOT Standard Specifications and Qualified Products List (QPL) provided by the Department.

Within twenty one (21) calendar days after final design approval, the Contractor shall prepare and submit a complete project specific list of material items and quantities to be used on the project as a Job Guide Schedule (JGS). The JGS shall be maintained throughout the project and shall reflect changes in the materials placed and any additional materials placed. The JGS shall be updated and provided by the Contractor

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on a monthly basis to the CA. The JGS shall specify each material placed by material number and related information, the total quantity placed throughout the project duration, the quantity placed since the previous submittal, and any additional materials identified with related quantities and testing details. These quantities will facilitate verification that minimum materials acceptance testing requirements are being performed in accordance with the Contractor's QC/QA Plan. At the completion of the project, the final certification JGS shall be in the same format as the monthly reports. No work on activities which require testing can commence until the JGS has been reviewed and accepted by the Department. Certificates of Compliance shall be submitted per Section 106.04, NH Standard Specifications.

**5.21.3 Materials Control and Testing**

The Contractor shall be responsible for Acceptance Sampling and Testing in accordance with the Department's procedures for materials control as outlined in the Construction Manual, Division 700. The Contractor shall follow the specific sampling and testing frequencies as outlined in the "NHDOT Guide to Frequency of Sampling and Testing" as found in Section 703.4 of the Construction Manual and as outlined in the NHDOT Standard Specifications for the specific materials. Some manufactured materials, such as pre-cast concrete structures and asphalt, require testing and inspection at the source plant prior to incorporation into the work. The Contractor shall arrange to have representatives from the Bureau of Materials and Research conduct all plant inspections required for this project. All references to the Department's Contractor Administrator shall be understood to mean the Contractor's Construction Supervisor.

The Department shall maintain the right to inspect construction and acceptance testing activities, including independent QA testing materials and request any documentation from the Contractor to ensure quality products and services are being provided. The Contractor shall provide not less than three days advanced notice for any Acceptance Sampling and Testing anticipated on the project. The notice shall include the type of material testing, the location of the material placement, and an on-site Contractor point of contact for the testing.

In addition to materials testing, the Contractor shall supply the proposed mix designs for concrete and asphalt for approval.

**5.22 SCHEDULE OF PRICES**

The Contractor will be responsible for invoicing the NHDOT Project Manager for the design and construction portions of the project. Payments may be made upon written request of the Contractor, based on satisfactory evidence of actual completion of work performed at the time of the payment. Invoicing will be based on the completion of project milestones identified in **Section 3.20.5: Section 5: Cost and Price Analysis** as modified by the terms outlined in **Section 5.9: Initiation of the Maintenance and Warranty Support Period** and shall reflect the payment schedule included in the final contract. Final payment will be made upon final acceptance by the Department. The Contractor shall submit the item schedule of prices to the Department for approval. No invoices shall be submitted prior to Department approval of the schedule of prices.

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Upon receipt of the invoice, the TSMO Project Manager and/or CA will make judgment on whether or not work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

**5.23 COMPUTER AUTOMATION AND PLANS**

The Department will furnish the following data to the Contractor, when available, as applicable and upon request:

- Electronic files in English units of the following information in accordance with the Department's CAD/D Procedures and Requirements, for incorporation into the plans by the Contractor.
  - All available survey and baseline data on disk or tape, notes and note reductions in the format outlined in the Department's CAD/D Procedures and Requirements.
  - Electronic drawings in MicroStation format, along with reproducible sheets, of roadway typical cross-sections and other detail sheets shall be provided, when available from the Department's CAD/D library, upon request by the Contractor, in accordance with the Department's CAD/D Procedures and Requirements.

Any updates of the Department-supplied CAD/D information will be released to the Contractor throughout the duration of the Contract, as appropriate. The Department shall be held harmless from any and all loss, damage, expense, or liability whatsoever resulting from the use of these programs and macros or translated information. The Department may supply the documentation for use with these programs and macros but shall not be responsible for any training in their use.

All plan drawings, including size of sheets, lettering, symbols, and scale of said drawings, shall conform to the requirements and standards of the Department and this request for proposals. Any and all CAD/D related work completed during the course of this project shall be performed in conformance with the Department's CAD/D Procedures and Requirements in effect at the time of execution of this RFP. Final construction plans and final right of way plans shall be submitted on quality paper prints. Cross-section sheets shall be submitted on quality paper prints. As-built and right of way plans shall be submitted on 22 inch x 34 inch sheets.

In addition to the final reproducible plans being furnished as noted herein, the Contractor shall provide electronic file copies of all highway and bridge project plan sheets including, but not limited to, detail sheets, general plans, cross-sections, and right of way plans. These final electronic files shall be indexed with file name, descriptions of the contents of the file, and project sheet number applicable. All files shall be submitted in conformance with the Department's CAD/D procedures and Requirements. Any plans produced from a spreadsheet (e.g., Excel, or equivalent) shall be submitted in ASCII file or format suitable for incorporation into Microsoft Office or the current Department software. The final Special Provision(s) and other documents, as requested, shall be submitted in both electronic format (Microsoft Word-compatible) and hard copy. The Contractor shall also be prepared to submit separate electronic files of all alignments, bound locations, and other project features, as required, in a format

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acceptable to the Department, throughout the design contract, in conformance with the Department's CAD/D Procedures and Requirements.

The project shall be developed utilizing computer automation systems to facilitate the development of the contract plans. Seed Files, Cell Libraries, User Commands, and related programs developed for roadway design and drafting are available in Micro-station format. However, it is the responsibility of the Contractor to obtain and utilize current Department releases of all CADD applications. (Reference the Department website for updated information).

**5.24 CONSTRUCTION ENGINEERING AND INSPECTION**

The Department is responsible for providing Quality Assurance Engineering and will perform oversight duties including: inspection review, report review, contract administration, and contract payment. As detailed in **Appendix B: Additional Information**, NHDOT has engaged the services of VHB to provide technical and quality assurance support services within this procurement and to act as its agent in performing many of these functions.

The Contractor shall provide construction engineering, materials testing, and inspection services. All Contractor activities will be under the direction of the Quality Control Engineer (a NH licensed Professional Engineer). The Quality Control Engineer shall coordinate Contractor construction engineering and inspection services with NHDOT and VHB to allow for concurrent construction engineering and inspection services oversight.

**5.25 DESIGN ISSUE ESCALATION AND CONFLICT RESOLUTION**

The Department has established the issue escalation process for design questions and conflict resolution that the Contractor shall follow unless revised by a Partnering Agreement. All issues are to be directed to the Department's FEET Corridor ATMS Project Manager. If the issue cannot be resolved at this level, the Department's FEET Corridor ATMS Project Manager shall forward the issue to the next level in the process. The escalation process begins with the Director of Project Development, and then to the Assistant Commissioner. Each level shall have a maximum of three (3) working days to answer, resolve, or address the issue. This three (3) day window is a response time and does not infer resolution. Questions may be expressed verbally and shall be followed up in writing. The Department TSMO Project Manager will respond in a timely manner, not to exceed three (3) working days. The Contractor shall provide any available supporting documentation.

The Contractor shall provide a similar issue escalation process for their organization with personnel of similar levels of responsibility.

The Assistant Commissioner shall have the final authority on design decisions.

**5.26 CONSTRUCTION CLARIFICATION, CONFLICT RESOLUTION**

In the event that construction problems occur, the resolution of those problems will be processed in one of the following two ways unless revised by a Partnering Agreement:

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If the resolution does not change the original intent of the technical proposal/RFP, then the Contractor Construction Supervisor or Engineer of Record will be responsible for developing the solution and the NHDOT Contract Administrator will be responsible for review and response within fourteen (14) calendar days. The Contract Administrator will either concur with the proposed solution or, if the Contract Administrator still has concerns, the issue will be escalated as described below.

If the resolution does alter the original intent of the technical proposal/RFP or if the issue cannot be resolved at the Contract Administrator level, then the Contractor Project Manager will develop the proposed solution, copy the Contract Administrator, and send it to the TSMO Project Manager for review and response. The TSMO Project Manager will respond to the proposed solution within fourteen (14) calendar days. The TSMO Project Manager will either concur with the proposed solution or, if the TSMO Project Manager has concerns, the issue will be elevated further as described below. Changes to the original intent of the technical proposal/RFP will require a contract change order with the FEET Corridor ATMS Project Manager's approval.

The third step in the issue escalation process for construction questions and conflict resolution shall follow if the TSMO Project Manager has unresolved concerns, unless revised by a Partnering Agreement. Any remaining issues are to be directed to the TSMO Administrator and Turnpikes Administrator. Issues raised to the Administrator level shall be prepared by the Contractor in writing. If the issue cannot be resolved at this level, the Administrators will involve the Director of Operations and/or the Assistant Commissioner, as appropriate. Each level beyond the TSMO Project Manager shall require a minimum of three (3) working days to address the issue. This three-day window is a response time and does not infer resolution. The Contractor Project Manager and/or executive representative of the Contractor shall provide any supporting documentation to assist with resolution at this level.

The Contractor shall provide a similar process for their organization with personnel of similar levels of responsibility.

Claims for adjustment and resolution of claims and disputes shall conform to the requirements of Sections 105.18 and 105.19 of the NHDOT Standard Specifications.

### **5.27 DESIGN AND CONSTRUCTION CRITERIA**

All plotting, drafting, and calculations performed by the Contractor shall be independently checked by members of the Contractor's staff other than those who performed the original work. The work of each stage submission (including quantity estimates) shall have been appropriately checked. Final plans shall have had complete final and "three-way" checking. Contractor shall present an acceptable "three-way" checking methodology.

The Contractor shall verify all computations and design calculations.

Before construction activities can begin for a specific component, signed and sealed design plans and calculations supporting the design for that component shall be reviewed and approved by the Department. Component submittals shall be complete, including all the supporting information necessary for review. The work shall represent logical work activities and

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shall show impacts on subsequent work on this project. Any modification to the construction component due to subsequent design changes as the result of design development is solely the Contractor's risk. Upon review by the Department, the plans will be stamped "Released for Construction" and initialed and dated by the reviewer.

All design and construction documents shall be prepared using the English system.

**5.28 SPECIFICATIONS**

As part of the Technical Proposal, the Contractor shall use the new 2016 edition of New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction and any Supplemental Specifications in effect at the time of the proposal due date. The Contractor shall identify special provisions and supplemental specifications, which will apply to the work in the proposal. Department specifications may not be modified or revised, except for the Basis of Payment sections. The Contractor shall also include draft versions of all technical special provisions, which will apply to the work in the proposal. Technical special provisions shall be written only for items not addressed by Department specifications and may not be used as a means of changing Department specifications.

Before construction activities can begin the Contractor shall prepare and submit a signed and sealed Construction Specifications Package for the project containing all applicable special provisions and supplemental specifications. The signed and sealed Construction Specifications Package shall also include individually signed and sealed technical special provisions for any and all work not addressed by Department specifications. Any technical special provisions included in the signed and sealed Construction Specifications Package which had not been included in the proposal phase, may require a contract cost modification as a condition of approval.

Upon review by the Department, the Construction Specifications Package will be stamped "Released for Construction" and initialed and dated by the reviewer. The Contractor shall account for review periods in its schedule.

Any subsequent modifications to the Construction Specifications Package shall be prepared, signed, and sealed as a Supplemental Specifications Package, subject to the same process for submittal, review, and, release for construction, as described above for the original Construction Specifications Package. Construction work affected by Supplemental Specifications Packages shall not begin until stamped "Released for Construction".

**5.29 SHOP DRAWINGS**

The Contractor shall be responsible for the preparation and approval of all Shop Drawings. Shop Drawings shall be submitted to the Department and shall bear the stamp and signature of the Contractor and be signed and sealed by the Engineer of Record (EOR) and any Specialty Engineer responsible for that portion of the project. The Department will review the Shop Drawing(s) to evaluate compliance with project requirements and provide any findings to the Contractor. The Department's procedural review of Shop Drawings is to assure that the Contractor and the EOR have both accepted and signed the drawings, the drawings have been independently reviewed, and are in general conformance with the plans. The Department's

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review is not meant to be a complete and detailed review. Upon review of the Shop Drawings, the Department will stamp “Released for Construction” or “Released for Construction as Noted” or “Revise and Resubmit” and they will be initialed and dated by the reviewer. For “Released for Construction as Noted” and “Revise and Resubmit”, the Department will indicate the specific comments and concerns to be addressed by the Contractor.

Component submittals shall be accompanied by sufficient information for adjoining components or areas of work to allow for proper evaluation of the component submitted for review.

**5.30 SEQUENCE OF CONSTRUCTION**

The Contractor shall construct the work in a logical manner and with the following objectives as guides:

- Maintain, to the maximum extent possible, the quality of existing traffic operations, both in terms of flow rate and safety, throughout the duration of the project.
- Minimize lane closures to the extent practical.
- Minimize the number of different Traffic Control Plan (TCP) phases, i.e., number of different diversions and detours for a given traffic movement.
- Maintain pedestrian and vehicular access to all properties at all times.
- Coordinate with adjacent construction projects and maintenance agencies.
- Two-way traffic shall be maintained on local roads (within the project area) at all times. Exceptions will be permitted for flagging operations upon approval of the municipality with jurisdiction over the local roadway.

The Contractor shall not perform any work involving high noise machinery such as jackhammers and/or excavating equipment prior to 7:00 a.m. or after 7:00 p.m., including starting up of equipment unless otherwise approved. No work is allowed on Saturday, Sunday and State Holidays without the authorization of the impacted town and FEET Corridor ATMS Project Manager / Contract Administrator.

**5.31 TRAFFIC CONTROL ANALYSIS/ TRAFFIC CONTROL PLANS**

The Contractor shall design and implement a safe and effective Traffic Control Plan to move vehicular and pedestrian traffic during all phases of construction. The areas shall include, but are not limited to, construction phasing, utility relocation, drainage structures, signalization, ditches, front and back slopes, drop-offs within the clear zone, and traffic monitoring sites. Special consideration shall be given to the drainage system when developing the construction phases. Positive drainage shall be maintained at all times.

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The Traffic Control Plan shall address how to ensure the maintenance of traffic throughout the duration of the contract. Any restrictions to oversize/overweight vehicles or width restrictions during construction phasing shall be specifically discussed.

The Traffic Control Plan shall be prepared in accordance with the Department's Design Standards, Highway Design Manual, and the Manual on Uniform Traffic Control Devices (MUTCD).

The Contractor shall utilize the following standards and specifications as part of the Traffic Control Plan.

- Sections 618 and 619 of the Standard Specifications.
- Work Zone Traffic Control Standard Plans.
- Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition with all current updates and official interpretations.
- State of New Hampshire Flagger Handbook.
- Pavement Marking Standards Detail Sheets.
- Bureau of Turnpikes Traffic Control Procedural Guidelines and Hours of Operation.

The Contractor shall provide traffic control devices, Uniformed Officers, and flaggers, as necessary, to ensure the safety of the workers, traveling public, and property on this project. The above-referenced specifications, guidelines, and provisions herein provide minimum requirements; the Contractor may be directed to expand upon the Traffic Control Plan if conditions warrant.

The Contractor shall prepare additional plan sheets such as cross sections, profiles, drainage structures, retaining wall details, and sheet piling as necessary for proper construction and implementation of the Traffic Control Plan.

### **5.32 PERFORMANCE BOND**

The Contractor shall secure a Contract Bond as defined in **Section 103.05 Contract Bond** in the 2016 NHDOT Standard Specifications for Road and Bridge Construction.

### **5.33 LICENSES**

The State of New Hampshire shall be the registered licensee of all software procured for execution of the project, whether provided by a vendor or supplier or for specific software code prepared by the Contractor for this Project. During the development and implementation of the FEET Corridor ATMS project, the Contractor shall provide the Department with the necessary user rights for all vendor and project developed software. The software license and full user

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rights shall be reassigned to NHDOT from the Contractor upon completion of System Acceptance testing.

**5.33.1 License Grant**

The Contractor shall grant the Department and TMC user rights for all vendor and project developed software and its associated documentation until such time as the implementation of the Project is successfully completed and/or terminated and software license is assigned to the Department.

The license shall grant the Department perpetual, nonexclusive, nontransferable, and irrevocable use of the software and its associated documentation.

**5.33.2 Software and Documentation Copies**

The Contractor shall provide the Department with three (3) hard copy versions of the software's associated documentation and three (3) electronic versions in Microsoft WORD and PDF format. The Department shall have the right to copy the software and its associated documentation for its internal business needs. The Department agrees to include copyright and proprietary notices provided to the Department by the Contractor on such copies.

The Contractor shall provide the software's Administrator User Name(s) and Password(s) upon completion of the Central Control Test.

**5.33.3 Restrictions**

Except as otherwise permitted under the Contract, the Department agrees not to reverse assemble, reverse compile or otherwise derive a source code version of the software.

**5.33.4 Title**

The Contractor shall hold the right to allow the Department to use the software or hold all title, right, and interest in the software and its associated documentation.

**5.33.5 Third Party**

The Contractor shall identify all third party contracts to be provided under the Contract with the Contractor's Proposal. The terms in any such contracts shall be consistent with this RFP and any resulting contract. The Contractor will work with the Department to ensure that the proper licensing and support is put in place. The Department will contract directly with the software publishers, if required.

**5.33.6 CCTV Software Licensing**

The Contractor shall provide Milestone Corporate Edition 2014 camera licenses for each CCTV camera procured under this project. The cost for the initial license and for the first

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two years of operation following Final System Acceptance shall be paid for by the Contractor. Milestone licensing shall also include Upgrade Protection for each camera procured. At the time of RFP release, the licensing costs were approximately \$250 per camera per year, plus \$60 per camera for upgrade protection. Note that in the event the Milestone software licensing is upgraded by the Department within the period up to the end of the two year Warranty and Maintenance period, the Contractor shall be responsible for all licensing costs, including upgrading licenses to the new software. The cost for each additional year of operation shall be included in the price for the Optional Year 3, Year 4 and Year 5 Maintenance and Warranty Support periods.

**5.33.7 Network Monitoring System Licensing**

The Contractor shall provide a license for each network device that is capable of SNMP. For example, some devices on the FEET Corridor include a Cambium Network Monitoring System (NMS). The Contractor shall provide additional licenses for any expansion of the existing NMS during the Central Control testing. The cost for the initial license and for the first two years of operation following Final System Acceptance shall be paid for by the Contractor. The cost for each additional year of operation shall be included in the price for the Optional Year 3, Year 4 and Year 5 Maintenance and Warranty Support periods.

**5.34 FEDERAL AVIATION ADMINISTRATION FORM 7460 – NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION**

Many of the proposed ITS devices within the FEET Corridor ATMS project limits are within the proximity of three public airports and heliports:

- Nashua Airport at Boire Field (northwestern Nashua, NH)
- Manchester-Boston Regional Airport (southern Manchester, NH)
- Concord Municipal Airport (southeastern Concord, NH)

The Contractor shall perform an Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) review of any new construction or alterations of existing devices which may affect navigable airspace along the FEET Corridor ATMS project area. A Notice of Proposed Construction or Alteration (FAA Form 7460-1) shall be submitted electronically to FAA if any of the proposed construction or alterations of existing devices are described in 14 C.F.R. Part 77.9. This code requires that any person or organization that intends to construct or alter equipment within the proximity of a public airport must notify the FAA. The Contractor shall file an FAA Form 7460 for each device proposed under this project that meets the notification criteria listed in 14 C.F.R. Part 77.9. This includes the temporary impacts during construction caused by use of cranes or wireless equipment.

In addition to the three public airports and heliports, the FAA maintains an administrative property with a government-owned helipad adjacent to the FEET between Exit 5 and Exit 6. The Contractor shall file an FAA Form 7460 for any equipment proposed to be constructed within 200 feet of the fence line of the FAA property.

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The Contractor shall be responsible for any mitigations that FAA requires to the proposed equipment based on the FAA review of the submitted Notices of Proposed Construction or Alteration. The Contractor shall follow-up the filing of the FAA forms with all subsequent notifications as required by FAA.

**5.35 COORDINATION WITH THE STATEWIDE ATMS SYSTEM INTEGRATOR**

The Contractor shall provide a compact disk (CD) or other electronic medium that contains all management information base (MIBs) and an Interface Control Document for each ITS device that enables the Department's Statewide ATMS System Integrator, SwRI, to integrate the new ITS equipment into the Statewide New England Compass ATMS.

The Contractor shall provide a copy of the vendor's or supplier's equipment specifications including the NTCIP 1203 version 2 or latest supported specification. The Contractor shall have the vendor or supplier indicate that the ITS devices delivered for this project are equipped with the software and hardware required to meet each specification and sign the bottom of each page. For DMS equipment, the Contractor shall provide any ancillary hardware necessary to meet the functions required in the NTCIP specification. This signed copy of the vendor's or supplier's specifications shall be submitted as part of the Preliminary System Design.

In addition, the Contractor shall verify that the proposed ITS devices are included in the SwRI supported device list and the Milestone CCTV supported device list, which may be obtained from the TSMO Project Manager. If the Contractor proposed equipment that is not included in the supported device listings, then the Contractor shall provide whatever software coding is required by SwRI to integrate the unsupported ITS devices into the Statewide ATMS and Milestone Video Management System. All costs for integrating unsupported ITS devices into the Statewide ATMS shall be the responsibility of the Contractor. Any costs for integrating supported ITS devices into the Statewide ATMS beyond the requirements cited in this RFP will be the responsibility of the Department.

The Contractor shall support SwRI during the integration of the FEET ATMS devices into the Statewide ATMS by providing relevant information and coordinating integration and system maintenance, including network administration, activities with NHDOT and SwRI. It is anticipated that the integration of the FEET ATMS devices will occur following the Substantial Completion of the project but prior to the Final System Acceptance. During the ITS device integration into the Statewide ATMS, the Contractor's stand-alone computer system shall remain the property of NHDOT for verification of device operations. Ultimately, the Contractor shall be responsible for the end to end integration of the FEET Corridor ATMS into the New England Compass ATMS.

Anticipated activities include the integration of the new ITS devices into the Statewide ATMS database for control of the FEET Corridor field devices and display of travel messages on the DMS and PCMS hardware. In particular, the Contractor shall coordinate the licensed software MVDS equipment and support the Statewide ATMS System Integrator in the integration of the MVDS equipment into the SwRI New England Compass ATMS.

Immediately following the Integration Central Control testing, the Contractor shall be responsible for responding to trouble calls (which may be false) and network administrator activities resulting

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from operator error or the activities of the System Integrator during the Warranty and Maintenance period. The Contractor shall not be responsible for hardware failures caused by the System Integrator.

The Contractor shall not be responsible for damaged equipment in the TMC resulting from NHDOT or SwRI actions. The Contractor shall not be responsible for paying SwRI for their time or labor for the integration of the FEET Corridor ATMS into the New England Compass ATMS unless the Contractor's hardware is not supported by the New England Compass ATMS.

SwRI Integration Contacts:

Robert Heller, SwRI Project Manager (210-522-3824)

Amit Misra, SwRI Software Development Manager (210-522-6065)

**5.36 RELATED DOCUMENTS REQUIRED AT CONTRACT TIME**

The following documents will be required during final contract stage:

1. **Certificate of Good Standing/Authority** - As a condition of contract award, the Contractor shall furnish a Certificate of Authority/Good Standing dated April 2016 or later from the Office of the Secretary of State of New Hampshire. If your company is not registered, an application form may be obtained from:

Secretary of State  
State House Annex  
25 Capitol Street  
Concord, New Hampshire 03301  
603-271-3244

Forms are also available on: [www.state.nh.us/sos/corporate/index.htm](http://www.state.nh.us/sos/corporate/index.htm)). If your company is registered, a certification thereof may be obtained from the Secretary of State.

2. Certificate of Vote (Appendix B-5: Sample Certificate of Vote).
3. Proof of Insurance Compliance (Appendix D: State of New Hampshire Terms and Conditions).

**5.37 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS – PRIMARY COVERED TRANSACTIONS**

Instruction for Certification

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

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2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department or agency may terminate this transaction for cause of default.
4. The prospective primary participant shall provide immediate written notice to the Department or agency to which this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of these regulations.
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification" Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed

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that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

**5.38 SPECIAL ATTENTION - LOBBYING**

UNITED STATES DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

SUBJECT: LIMITATION ON USE OF GRANT OR CONTRACT FUNDS FOR LOBBYING

The lobbying restrictions were established by Section 319 of Public Law 101-121 (Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 1990).

The law prohibits Federal funds from being expended by the recipient or any lower tier sub recipients of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement. The extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement is also covered.

Federal-aid contractors, and consultants, as well as lower tier subcontractors and subconsultants are also subject to the lobbying prohibition. To assure compliance, a certification provision is included in all Federal-aid construction solicitations and contracts, and consultant agreements exceeding \$100,000 in Federal funds.

The Contractor shall be aware that by signing and submitting this proposal, he or she is attesting to the requirements of the certification provisions.

During the period of performance of a grant or contract, recipients and sub recipients shall file disclosure form (Standard Form LLL) at the end of each calendar year quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any previously filed disclosure form.

Lower tier certifications should be maintained by the next tier above (i.e., prime contractors will keep the subcontractors' certification on file, etc.). Copies of Standard Form LLL will be included in the subcontract package for distribution to successful bidders.

**5.39 SPECIAL ATTENTION – DISADVANTAGED BUSINESS ENTERPRISE POLICY**

It shall be the policy of NHDOT to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBE's) to participate in the performance of all

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contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT), Federal Highway Administration and as set forth below.

**1. Policy.** It is the policy of the United States Department of Transportation to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 Code of Federal Regulation (CFR) Part 26, to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 applies to this contract.

**2. Disadvantaged Business Enterprise (DBE) Obligation.** The State and its Contractors agree to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 CFR Part 26, to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. Each subcontract the prime contractor signs with a subcontractor shall include this assurance: The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the NHDOT deems appropriate.

**3. Sanctions of Non-Compliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and, after notification of the United States Department of Transportation, may result in termination of this contract or such remedy as the State deems appropriate.

While there is no minimum DBE percentage requirement for this contract, Contractors shall outline their contribution towards meeting New Hampshire's 5% DBE Goal for the State.

**5.40 SPECIAL ATTENTION – DISADVANTAGED BUSINESS DIRECTORY**

The current Disadvantaged Business Directory is available on-line in the Business Center at NHDOT.COM. If you have questions or do not have access to the Internet, the DBE Directory may be obtained from the EEO Coordinator, located at 7 Hazen Drive, Concord, NH 03302, Tel: (603) 271-6612.

**5.41 SPECIAL ATTENTION – BUY AMERICA**

Section 327 (b)(1) of the Department of Transportation Appropriations Act for FY 2001 requires that to the greatest extent practical only American-made equipment and products be purchased for this project.

Section 327 (b)(1) reads as follows: Purchase of American-made equipment and products. – In the case of any equipment or product that may be authorized to be purchased with financial assistance provided using funds made available in this Act, it is the sense of the Congress that entities receiving the assistance should, in expending the assistance, purchase only American-made equipment and products to the greatest extent practicable.

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In accordance with the **BUY AMERICA** requirements of the Federal regulations, all manufacturing processes for steel and iron materials furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. shall occur in the United States.

Products of steel include, but are not limited to, such products as structural steel, piles, reinforcing steel, structural plate, steel culverts, guardrail and steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron grates. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not subject to this clause, only the application process.

A Certificate of Compliance, conforming to the requirements of Section 106.04 NH Standards and Specifications, shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall also specifically certify that all manufacturing process for the materials, except as allowed by this Special Attention, occurred in the United States.

The requirements of said law and regulations do not prevent a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or \$2,500.00, whichever is greater. The Contractor shall furnish the Engineer acceptable documentation of the quantity and value of any foreign steel and iron prior to incorporating such materials into the work.

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**APPENDIX A: TERMS AND DEFINITIONS**

**A-1: ACRONYMS AND ABBREVIATIONS**

The following terms and definitions apply to this RFP and any resulting contract.

AASHTO – American Association of State Highway Transportation Officials  
ATMS – Advanced Transportation Management System  
AVI – Automatic Vehicle Identification  
ANSI – American National Standards Institute  
CA – Contract Administrator  
CARS – Condition Acquisition Reporting System  
CCTV – Closed Circuit Television  
CD – Compact Disk  
CD-ROM – Compact Disk - Read Only Memory  
CEI – Construction, Engineering and Inspection  
CG – Carrier Guard  
CMP – Configuration Management Plan  
CPM - Construction Project Management  
COTS – Commercial Off the Shelf  
DBA – Database Administrator  
DVD – Digital Video Disk  
DMS – Dynamic Message Sign  
DOT – Department of Transportation  
DSD – Detailed System Design  
EB – Eastbound  
EMT - Electrical Metallic Tubing  
EOC – Emergency Operations Center  
EOR - Engineer of Record  
FEET – Frederick E. Everett Turpike  
FHWA – Federal Highway Administration  
GIS – Geographic Information System  
GPS – Global Positioning System  
HAR – Highway Advisory Radio  
IEEE – Institute of Electrical and Electronics Engineers  
IEN – Information Exchange Network  
IP – Internet Protocol  
ISO – International Standards Organization  
ISP – Internet Service Provider  
ITS – Intelligent Transportation Systems  
JGS - Job Guide Schedule  
LAN – Local Area Network  
LCD – Liquid Crystal Display  
MPEG – Motion Picture Experts Group

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MOT- Maintenance of Traffic  
MTBF – Mean Time Between Failure  
MTTR – Mean Time to Repair  
MVDS – Motor Vehicle Detection System  
NB – Northbound  
NEC – National Electric Code  
NEMA – National Electrical Manufacturers Association  
NTCIP – National Transportation Communications for ITS Protocols  
NTP – Notice to Proceed  
NHDAS - New Hampshire Department of Administrative Services  
NHDOS - New Hampshire Department of Safety  
NH DOT– New Hampshire Department of Transportation  
NH DOIT – New Hampshire Department of Information Technology  
NTSC – National Television Standards Committee  
OTDR – Optical Time Domain Reflectometer  
PDF – Portable Document File  
P.E. or PE – Professional Engineer  
PL – Private Line  
PSD – Preliminary System Design  
PS&E – Plans, Specifications and Estimates  
PSAP – Public Safety Answering Point  
PSTN – Public Switched Telephone Network  
PTZ – Pan, Tilt and Zoom  
QMP – Quality Management Plan  
QoS – Quality of Service  
RoIP – Radio Over Internet Protocol  
SB – Southbound  
SCMP – Software Configuration Management Plan  
SDO – Standards Development Organization  
SDP – Software Development Plan  
SE- System Engineering  
SFR – Software Functional Requirements  
SP – State Police  
SONET – Synchronous Optical Network  
SSI – Surface Systems Incorporated  
SwRI – Southwest Research Institute  
TCP - Traffic Control Plans  
TMS – Transportation Management System  
TMC – Transportation Management Center  
TSMO – Transportation Systems Management and Operations  
UAT – User Acceptance Testing  
US – United States  
VoIP – Voice Over Internet Protocol  
VSS – Vehicle Sensor System  
VSL – Variable Speed Limit  
WCS - Wireless Communications System  
WYSIWYG – What You See Is What You Get  
WB – Westbound

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**A-2: TERMS AND DEFINITIONS**

Throughout this RFP, the following Terms will have the following Definitions and meanings.

<b>Term</b>	<b>Definition for this Project</b>
Acceptance Test Plan	An Acceptance Test Plan document describes in detail the series of tests and training to be performed with corresponding acceptance criteria and how the tests will be performed.
Agency	Agency of the State.
Architect/Engineer	New Hampshire Department of Transportation and its Quality Assurance Consultant
Budget Fiscal Year	The New Hampshire budget fiscal year which extends from July 1 <sup>st</sup> through June 30 <sup>th</sup> of the following calendar year.
Change Order	The document used to propose and accept changes to the Contract Work Plan concerning but not limited to project specifications, project schedule, budget, and resources.
Commission	Complete implementation of system, including acceptance testing, training and documentation.
Contract Conclusion	Refers to the conclusion of the Contract, as applicable, for any reason, including but not limited to, the successful Contract Completion, termination for convenience, or termination for default.
Custom Software	Software developed and provided by the Contractor that is required for a functional Advanced Transportation Management System.
Contractor	A Contractor submitting a Proposal to provide implementation services and hardware/software in response to this RFP.
Department	Refers to the New Hampshire Department of Transportation.
Department of Information Technology (DOIT)	The Department of Information Technology established under Legislative Rule 21-R, September 5, 2008.
Enhancements	New releases, updates, changes, customization, modifications and additions to the ITS Software.

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Federal Fiscal Year (FFY)	The Federal fiscal year extends from October 1st through September 30 <sup>th</sup> of the following calendar year.
Firm Fixed Price Contract	A firm-fixed-price contract provides for a price that is not subject to increase or adjustment (i.e. lump sum).
Information Technology (IT)	Refers to the tools and processes used for the gathering, storing, manipulating, transmitting, sharing, and sensing of information including, but not limited to, data processing, computing, information systems, telecommunications, and various audio and video technologies.
NHDOT FEET Corridor ATMS Project Team	Representatives from business offices within NHDOT as well as significant Stakeholder Organizations that will participate in project design review and transition meetings, and will provide guidance in the operational requirements and usability of the Advanced Transportation Management System.
Normal Business Hours	8:00 AM to 4:30 PM EST, Monday through Friday, excluding State of New Hampshire holidays. State holidays are: New Year's Day, Martin Luther King Day (observed), President's Day (observed), Memorial Day (observed), July 4th, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day.
Owner	New Hampshire Department of Transportation through the Bureau of Turnpikes
Project	The planned undertaking regarding the entire subject matter of the Contract and the parties' related activities.
Proposal	The submission from a Contractor in response to this RFP.
Schedule	The deadlines contained in the Work Plan for performance of Services and other Project activities.
Software	The configured software customized for the State provided by the Contractor in response to this RFP. All software provided by the Contractor under the Contract including, without limitation, custom software, vendor software, and COTS software.
Specifications	The written specifications that set forth the requirements which include, without limitation, this RFP, the Proposal, the Contract, any performance Standards, documentation, applicable State and Federal policies, laws and regulations, State technical standards; and subsequent State-approved Deliverables. The Specifications are considered part of the Contract.

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State	The State of New Hampshire, acting through the Department of Administrative Services.
State Fiscal Year (SFY)	The New Hampshire State fiscal year extends from July 1st through June 30 <sup>th</sup> of the following calendar year.
Subcontractor	An entity or individual retained by the Contractor to perform under the Contract on behalf of the Contractor and has no direct contractual relationship with the Department under the Project.
System	Consists of the total system including, without limitation, all Software, specified hardware, communications, and interfaces.
Task Order	A negotiated agreement obligating the Contractor to provide a defined service or produce a specific deliverable at a contracted price.
User Acceptance Testing (UAT)	User Acceptance Testing; the type of testing where monitored users determine whether a system meets all their requirements, and will support the business for which it was designed.
Work Plan	The document that sets forth the delineation of tasks, activities and events to be performed and Deliverables to be produced with regard to the Project. The Work Plan, and each State approved revision, will be considered part of the Contract.

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**APPENDIX B: ADDITIONAL INFORMATION**

**B-1: FEET CORRIDOR ATMS – NHDOT KEY PERSONNEL**

The NHDOT FEET Corridor ATMS Project Manager shall be defined as the point person for all Project activities through NHDOT. Currently this person is identified as Susan Soucie, PE. Ms. Soucie is also known as the TSMO Project Manager. Ms. Soucie shall also be the point person for the FEET Corridor design efforts.

The NHDOT FEET Corridor Construction Administrator (CA) is defined as the point person for FEET Corridor construction activities. Currently this person is identified as Nasser Yari.

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**B-2: KNOWN UTILITIES WITHIN THE PROJECT AREA**

**Town of Bedford**

CATV: Comcast

POC: Barry Sullivan (889-6718 x63917) and Steve Bouchard  
(Steve\_Bouchard@cable.comcast.com)

COMMUNICATIONS: AT&T Corp

POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber

POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)

POC: Jay Dunn (978-376-1388)

COMMUNICATIONS: Teleport Communications America, LLC

POC: Scott Ferreira ([sf5412@att.com](mailto:sf5412@att.com))

COMMUNICATIONS: US Sprint

POC: Michael Hanifan (413-237-2598)

COMMUNICATIONS: Verizon Business

POC: Stephen Parretti (508-248-1305)

FIRE: Bedford Fire Department

POC: Scott Wiggin, Fire Chief (603-472-3219 x14)

GAS: Liberty Utilities

POC: Andy Bernier (603-235-8760 (cell))

ITS: NHDOT-TSMO

POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eversource Energy

POC: Construction Services Support Center (1-800-362-7764)

POWER (TRANSMISSION): Eversource Energy

POC: Russell Maille (603-634-2477)

POWER (TRANSMISSION): National Grid

POC: Johnathan Estes (781-907-3303)

RAILROAD: Pan Am Railways

POC: David Fink (978-663-1175)

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

SEWER: Bedford Public Works Department  
POC: Jim Stanford (603-472-3070)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

WATER: Manchester Water Works  
POC: Guy Chabot (603-624-6516 X2801)

WATER: Pennichuck Water Works, Inc.  
POC: John Boisvert (603-913-2328)

**Town of Bow**

CATV: Comcast  
POC: Mike Cooke (603-679-5695 x1006)

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

FIRE: Bow Fire Department  
POC: H. Dana Abbott, Fire Chief (603-228-4320)

GAS: Liberty Utilities  
POC: Andy Bernier (603-235-8760 (cell))

ITS: NHDOT-TSMO  
POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eversource Energy  
POC: Construction Services Support Center (1-800-362-7764)

POWER (DISTRIBUTION): Unitil Energy Systems, Inc.  
POC: Chuck Lloyd (603-227-4520)

POWER (TRANSMISSION): Eversource Energy  
POC: Russell Maille (603-634-2477)

POWER (TRANSMISSION): National Grid  
POC: Johnathan Estes (781-907-3303)

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

RAILROAD: Pan Am Railways  
POC: David Fink (978-663-1175)

TELEPHONE: Dumbarton Telephone Company  
POC: David Montgomery (603-774-9911)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

WATER & SEWER: Concord General Services Department  
POC: Ed Roberge (603-225-8520)

**City of Concord**

CATV: Comcast  
POC: Mike Cooke (603-679-5695 x1006)

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

FIRE: Concord Fire Department  
POC: Richard Wollert (603-225-8667)

GAS: Liberty Utilities  
POC: Andy Bernier (603-235-8760 (cell))

GAS: Tennessee Gas Pipeline Company  
POC: David Wood (860-763-6005) and John Kennedy (john\_kennedy@kindermorgan.com)

ITS: NHDOT-TSMO  
POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eversource Energy  
POC: Construction Services Support Center (1-800-362-7764)

POWER (DISTRIBUTION): Unitil Energy Systems, Inc.  
POC: Chuck Lloyd (603-227-4520)

POWER (TRANSMISSION): Eversource Energy  
POC: Russell Maille (603-634-2477)

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POWER (TRANSMISSION): National Grid  
POC: Johnathan Estes (781-907-3303)

RAILROAD: NHDOT – Bureau of Rail and Transit  
POC: Shelley Winters, Administrator (603-271-2468)  
OPERATOR: New England Southern Railroad  
POC: Peter Dearness (603-783-8000)

RAILROAD: Pan Am Railways  
POC: David Fink (978-663-1175)

STEAM: Concord Steam Corporation  
POC: Mark Saltsman (603-224-1461)

TELEPHONE: Bayring Communications  
POC: Steve Bond (603-776-3334)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

TELEPHONE: TDS Telecom  
POC: Ernst (Mike) Bewersdorf (603-746-9288)

WATER & SEWER: Concord General Services Department  
POC: Ed Roberge (603-225-8520)

**Town of Hooksett**

CATV: Comcast  
POC: Katy Honohan (603-679-5695 x1011)

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: Lighttower  
POC: Mark Bonanno (508-616-7818)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

COMMUNICATIONS: Oxford Networks  
POC: Scot Crockett (207-333-3493)

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FIRE: Hooksett Fire Department  
POC: Michael Williams, Fire Chief (603-623-7272)

GAS: Liberty Utilities  
POC: Andy Bernier (603-235-8760 (cell))

GAS: Tennessee Gas Pipeline Company  
POC: David Wood (860-763-6005) and John Kennedy (john\_kennedy@kindermorgan.com)

ITS: NHDOT-TSMO  
POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eversource Energy  
POC: Construction Services Support Center (1-800-362-7764)

POWER (TRANSMISSION): Eversource Energy  
POC: Russell Maille (603-634-2477)

RAILROAD: Pan Am Railways  
POC: David Fink (978-663-1175)

SEWER: Hooksett Wastewater Department  
POC: Bruce Kudrick (603-485-7000)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

WATER: Central Hooksett Water Precinct  
POC: Jay Smith (603-624-0608)

WATER: Hooksett Village Water Precinct  
POC: David Foote (603-485-3392)

WATER: Manchester Water Works  
POC: Guy Chabot (603-624-6516 X2801)

WATER: Pennichuck Water Works, Inc.  
POC: John Boisvert (603-913-2328)

WATER & SEWER: Hooksett Highway Department  
POC: Leo Lessard (603-668-8019)

**City of Manchester**

CATV: Comcast  
POC: Katy Honohan (603-679-5695 x1011)

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: Lighttower  
POC: Mark Bonanno (508-616-7818)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

COMMUNICATIONS: Oxford Networks  
POC: Scot Crockett (207-333-3493)

COMMUNICATIONS: Teleport Communications America, LLC  
POC: Scott Ferreira ([sf5412@att.com](mailto:sf5412@att.com))

COMMUNICATIONS: US Sprint  
POC: Michael Hanifan (413-237-2598)

COMMUNICATIONS: Verizon Business  
POC: Stephen Parretti (508-248-1305)

FIRE: Manchester Fire Department  
POC: Jody Rivard (603-669-2256 x3301)

GAS: Liberty Utilities  
POC: Andy Bernier (603-235-8760 (cell))

GAS: Tennessee Gas Pipeline Company  
POC: David Wood (860-763-6005) and John Kennedy ([john\\_kennedy@kindermorgan.com](mailto:john_kennedy@kindermorgan.com))

ITS: NHDOT-TSMO  
POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eversource Energy  
POC: Construction Services Support Center (1-800-362-7764)

POWER (TRANSMISSION): Eversource Energy  
POC: Russell Maille (603-634-2477)

RAILROAD: Pan Am Railways  
POC: David Fink (978-663-1175)

SEWER: Bodwell Waste Services Corporation  
POC: Stephen St. Cyr (207-282-5222)

SEWER: Manchester Department of Public Works

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

POC: Todd Conners (603-624-6444 x5356)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

WATER: Manchester Water Works  
POC: Guy Chabot (603-624-6516 X2801)

**Town of Merrimack**

CATV: Comcast  
POC: Barry Sullivan (603-889-6718 x63917)

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: Lighttower  
POC: Mark Bonanno (508-616-7818)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

COMMUNICATIONS: Teleport Communications America, LLC  
POC: Scott Ferreira ([sf5412@att.com](mailto:sf5412@att.com))

COMMUNICATIONS: US Sprint  
POC: Michael Hanifan (413-237-2598)

COMMUNICATIONS: Verizon Business  
POC: Stephen Parretti (508-248-1305)

FIRE: Merrimack Fire Department  
POC: Michael Currier, Fire Chief (603-424-3690)

GAS: Liberty Utilities  
POC: Andy Bernier (603-235-8760 (cell))

POWER (DISTRIBUTION): Eversource Energy  
POC: Construction Services Support Center (1-800-362-7764)

POWER (TRANSMISSION): Eversource Energy  
POC: Russell Maille (603-634-2477)

POWER (TRANSMISSION): National Grid

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

POC: Johnathan Estes (781-907-3303)

RAILROAD: Pan Am Railways  
POC: David Fink (978-663-1175)

SEWER: Merrimack Public Works Department  
POC: Richard Seymour (603-424-5137)

TELEPHONE: FairPoint Communications  
POC: David Kestner (603-433-2119)

WATER: Merrimack Village District Water Works  
POC: Ron Miner (603-424-9241)

WATER: Pennichuck Water Works, Inc.  
POC: John Boisvert (603-913-2328)

**City of Nashua**

CATV: Comcast  
POC: Thomas Reed (603-889-6718 x63914)

COMMUNICATIONS: AT&T Corp  
POC: Mark Burkhart (203-266-4372)

COMMUNICATIONS: FirstLight Fiber  
POC: Michael Wescott (518-694-8740)

COMMUNICATIONS: Lighttower  
POC: Mark Bonanno (508-616-7818)

COMMUNICATIONS: New Hampshire Optical Systems (Waveguide, Inc)  
POC: Jay Dunn (978-376-1388)

COMMUNICATIONS: Teleport Communications America, LLC  
POC: Scott Ferreira ([sf5412@att.com](mailto:sf5412@att.com))

COMMUNICATIONS: US Sprint  
POC: Michael Hanifan (413-237-2598)

COMMUNICATIONS: Verizon Business  
POC: Stephen Parretti (508-248-1305)

FIRE: Nashua Fire Department  
POC: Brian Morrissey, Fire Chief (603-594-3651)

GAS: Liberty Utilities

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

POC: Andy Bernier (603-235-8760 (cell))

ITS: NHDOT-TSMO

POC: Susan Soucie (603-271-6862)

POWER (DISTRIBUTION): Eagle Creek Renewable Energy

POC: Corey Colby (603-286-8471)

POWER (DISTRIBUTION): Eversource Energy

POC: Construction Services Support Center (1-800-362-7764)

POWER (TRANSMISSION): Eversource Energy

POC: Russell Maille (603-634-2477)

RAILROAD: Pan Am Railways

POC: David Fink (978-663-1175)

SEWER: Nashua Division of Public Works

POC: Steve Dookran (603-589-3120)

TELEPHONE: FairPoint Communications

POC: David Kestner (603-433-2119)

WATER: Merrimack Village District Water Works

POC: Ron Miner (603-424-9241)

WATER: Pennichuck Water Works, Inc.

POC: John Boisvert (603-913-2328)

**State of New Hampshire  
Department of Transportation  
FEET CORRIDOR ATMS**

**B-3: STATE OF NEW HAMPSHIRE PROPOSAL TRANSMITTAL  
FORM LETTER**

To: NHDOT Point of Contact: **Susan Soucie, PE**  
TSMO Project Manager

RE: Proposal Name: **Frederick E. Everett Turnpike (FEET) Corridor ATMS Project**

Proposal Number: **Project No: 29408 - RFP DOT 2016-10**

Proposal Opening Date and Time: **April 22, 2016, 3:00 PM EST**

Dear Madam:

Contractor Name: \_\_\_\_\_ hereby offers to sell to the State of New Hampshire the services indicated in Project No. 29408 RFP DOT 2016-10 Frederick E. Everett Turnpike (FEET) Corridor ATMS Project at the price(s) quoted in Contractor Response to 3.20.5 Section 5: *Schedule, Cost and Price Analysis*, in complete accordance with all conditions of this RFP and all Specifications set forth in the RFP and in the State of New Hampshire Terms and Conditions outlined in RFP Section 5.0: *General Contract and Project Requirements* and Appendix D: *State of New Hampshire Terms and Conditions*.

**We attest to the fact that:**

- **The company has reviewed and agreed to be bound by all RFP terms and conditions including but not limited to the *State of New Hampshire Terms and Conditions* in Appendix D and *Contract Requirements* in Section 5, which shall form the basis of any Contract resulting from this RFP; No new terms and conditions have been added and no existing terms and conditions have been deleted in this RFP Proposal.**
- **The Proposal is effective for a period of 180 days or until the Effective Date of any resulting contract, whichever is later;**
- **The prices quoted in the Proposal were established without collusion with other eligible vendors and without effort to preclude the State of New Hampshire from obtaining the best possible competitive price; and**
- **The Vendor has read and included a copy of RFP DOT 2016-10 and any subsequent signed Addendum (a).**

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Our official point of contact is \_\_\_\_\_,

Title \_\_\_\_\_

Telephone \_\_\_\_\_, Email \_\_\_\_\_

Authorized Signature Printed \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Important Note: Vendors will be provided an electronic version of the RFP Transmittal Letter. Any electronic alteration to this Transmittal Letter template is prohibited. Any such changes may result in a Proposal being rejected.

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**B-4: QUALITY ASSURANCE CONSULTANT**

The New Hampshire Department of Transportation has engaged the services of VHB to provide technical and quality assurance support services within this procurement. The role of the Quality Assurance Consultant focuses on design reviews and acceptance testing as well as contributing to risk and issue management, and generally assisting in monitoring the project progress.

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**B-5: CERTIFICATE OF VOTE**

(Authority to enter into a Contract with the State)

This authorization notification shall be consistent with the Contractor's corporate structure and shall accompany a signed contract.

An officer of the company, name and title, shall certify that the person signing a Contract has been given the authority to do so. That authority shall be in effect the day the Contract is signed. The certifying official shall not be certifying him or herself, unless it is a sole proprietorship.

The document shall certify that:

- A. The signature of <the name and position of the signor of the contract> of the Corporation affixed to any contract instrument or document shall bind the corporation to the terms and conditions of the contract instrument or document.
  
- B. The foregoing signature authority has not been revoked, annulled or amended in any manner whatsoever, and remains in full force and effect as of the date of the Contract.

**SAMPLE:**

**CERTIFICATE**

(Corporation Without Seal)

I, \_\_\_\_\_, do hereby represent and certify that:  
(Name of Certifier)

(1) I am \_\_\_\_\_ of \_\_\_\_\_,  
(Position of the Certifier) (Corporation/Company Name)

a(n) \_\_\_\_\_ Corporation (the Corporation).  
(Describe Corporate Type)

(2) I maintain and have custody of and am familiar with the Seal and the minutes of the Corporation.

(3) I am duly authorized to issue certificates with respect to the contents of such books.

(4) The following statements are true and accurate based on the resolutions adopted by the Board of

Directors of the Corporation at a meeting of the said Board of Directors held on \_\_\_\_\_,

(Date of Meeting)

which meeting was duly held in accordance with \_\_\_\_\_ law and the by-laws of the

(State)

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Corporation.

(5) The signature of \_\_\_\_\_ of this Corporation

(name and position of the signor of the contract)

affixed to any contract instrument or document shall bind the corporation to the terms and conditions

of the contract instrument or document.

(6) The foregoing signature authority has not been revoked, annulled or amended in any manner

whatsoever, and remains in full force and effect as of the date hereof.

(7) This corporation has no seal.

IN WITNESS WHEREOF, I have hereunto set my hand as \_\_\_\_\_ of the Corporation.

(position of the Certifier)

Dated: \_\_\_\_\_  
(Current Date)

\_\_\_\_\_  
(Certifier Signature and Title)

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

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**B-6: NHDOT ENVIRONMENTAL REVIEW CHECKLIST**

The NHDOT Environmental Review checklist will be made available on-line for Contractor use.

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**B-7: SAMPLE SPECIAL PROVISION 509 – DRILLED SHAFTS**

The NHDOT sample Special Provision 509 for drilled shaft foundations will be made available on-line for Contractor use.

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**APPENDIX C: HIGH LEVEL DESIGN DOCUMENT**

The High Level Design Document (HLDD) will be made available on-line for Contractor use.

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**APPENDIX D: STATE OF NEW HAMPSHIRE TERMS AND CONDITIONS**

The State of New Hampshire has provided the below sample Agreement which includes the Terms and Conditions that will be included in any contract that is a result of this RFP. This Agreement and all of its attachments shall become public upon submission to the Govern and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the New Hampshire Department of Transportation and agreed to in writing prior to signing the contract. This RFP with all of its associated appendices, the Contractor's Proposal submission, and any materials provided during oral interviews shall be considered attachments to the final Agreement.

This Agreement, also known as Form Number P-37, was last revised in May 2015.

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**AGREEMENT**

The State of New Hampshire and the Contractor hereby mutually agree as follows:

**GENERAL PROVISIONS**

**1. IDENTIFICATION.**

1.1 State Agency Name		1.2 State Agency Address	
1.3 Contractor Name		1.4 Contractor Address	
1.5 Contractor Phone Number	1.6 Account Number	1.7 Completion Date	1.8 Price Limitation
1.9 Contracting Officer for State Agency		1.10 State Agency Telephone Number	
1.11 Contractor Signature		1.12 Name and Title of Contractor Signatory	
1.13 Acknowledgement: State of _____, County of _____ On _____, before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace  [Seal]			
1.13.2 Name and Title of Notary or Justice of the Peace			
1.14 State Agency Signature  Date:		1.15 Name and Title of State Agency Signatory	
1.16 Approval by the N.H. Department of Administration, Division of Personnel ( <i>if applicable</i> ) By: _____ Director, On: _____			
1.17 Approval by the Attorney General (Form, Substance and Execution) ( <i>if applicable</i> ) By: _____ On: _____			
1.18 Approval by the Governor and Executive Council ( <i>if applicable</i> ) By: _____ On: _____			

**2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED.** The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

**3. EFFECTIVE DATE/COMPLETION OF SERVICES.**

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

**4. CONDITIONAL NATURE OF AGREEMENT.** Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

**5. CONTRACT PRICE/PRICE LIMITATION/ PAYMENT.**

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

**6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.**

6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented

by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

**7. PERSONNEL.**

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

**8. EVENT OF DEFAULT/REMEDIES.**

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

**9. DATA/ACCESS/CONFIDENTIALITY/ PRESERVATION.**

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

**10. TERMINATION.** In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject

matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

**11. CONTRACTOR'S RELATION TO THE STATE.** In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

**12. ASSIGNMENT/DELEGATION/SUBCONTRACTS.** The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

**13. INDEMNIFICATION.** The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

**14. INSURANCE.**

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate ; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

**15. WORKERS' COMPENSATION.**

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A ("*Workers' Compensation*").

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

**16. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

**17. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

**18. AMENDMENT.** This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no such approval is required under the circumstances pursuant to State law, rule or policy.

**19. CONSTRUCTION OF AGREEMENT AND TERMS.** This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

**20. THIRD PARTIES.** The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

**21. HEADINGS.** The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

**22. SPECIAL PROVISIONS.** Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

**23. SEVERABILITY.** In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

**24. ENTIRE AGREEMENT.** This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

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**APPENDIX E: FEET CORRIDOR ATMS PROJECT BID ITEMS**

A Project Bid Items spreadsheet will be made available on-line for Contractor use. The Contractor shall use the Project Bid Items spreadsheet for the submission of the Cost Proposal.

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**APPENDIX F: FREDERICK E. EVERETT TURNPIKE (FEET)  
PRELIMINARY CONCEPT (30%) DESIGN PLANS**

The preliminary project plans will be made available on-line for Contractor use.

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**APPENDIX G: FEET CORRIDOR ATMS PRELIMINARY  
COMMUNICATIONS PATH ANALYSIS**

The Department conducted a preliminary quantitative evaluation of all of the proposed communications links included in the FEET Corridor ATMS project. For the fiber optic links, the analysis assumes that the Contractor will use the existing lit fibers where the communications design will use an existing ITS device as a hub location and that the Contractor will use existing dark fibers (to be assigned by the Department) for new equipment that will connect to the existing fiber optic backhaul along I-93.

For the wireless portion of the design, it is the Contractor's sole responsibility to perform their own communications design and analysis and to develop a wireless communications design that meets the functional requirements of the project. This preliminary communications evaluation is provided for informational purposes only to demonstrate the viability of a wireless approach to portions of this project. The Frederick E. Everett Turnpike (FEET) Corridor ATMS Deployment Plan was used as the basis for this wireless communications path analysis. The Communications Architecture Diagram contained in the FEET ATMS Preliminary Concept (30%) Design Plans (included in this RFP as Appendix F) as well as the tabulation of communications links contained in Table 1 in this Appendix below, were derived from the approach outlined in the FEET Corridor ATMS Deployment Plan. Additionally, a number of existing ITS devices were added to this evaluation. It is the Department's goal to connect these existing ITS devices as shown in the Preliminary Design Plans to the wireless communications system that will be designed and constructed in this project. The existing sites are so identified in Table 1.

Table 1 contains an entry for each of the proposed communications links in the project, including high capacity wireless backhaul links, wireless access links between project hubs and project ITS device cabinets, wireless access links between project ITS device cabinets, and fiber optic links between the existing fiber optic backhaul along I-93 and project ITS device cabinets. For each of the wireless links shown, the table shows the link length, assumed antenna height, clearance above an assumed sixty (60) foot tree canopy, and Fresnel zone.

As described in the RFP, the actual radio frequency to be used for the wireless access links to ITS device cabinets shall be proposed by the Contractor. For the purpose of this wireless path analysis, the public safety frequency band of 4.9 Ghz was used, such that first order Fresnel zone effects could be quantified and included in the analysis. This 4.9 GHz is the radio frequency that has been used for wireless access links on previous NHDOT ITS projects.

As described in the RFP, each of the wireless links in the wireless radio system shall have an availability, or "up time", of 99.99 percent. This is equivalent to a maximum outage time, averaged over one year, of 52.6 minutes. The Contractor shall demonstrate in the Radio Frequency Path Profile Study submission that each wireless link is designed to meet or exceed this requirement.

It must be noted that, in determining the assumed antenna heights, it was necessary to consider the antenna height needs of all ITS devices contained in the deployment plan, not just those required to be constructed as a result of this RFP. As described elsewhere in this contract, the

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Contractor shall construct a communications system that meets the needs of the ITS devices defined herein, as well as all ITS devices described in the deployment plan. For example, if an ITS device site “A” to be constructed in this project requires an antenna height of sixty (60) feet to provide wireless connection to the connected ITS devices for this project only, but this same ITS device site “A” needs an antenna height of eighty (80) feet in order to properly communicate with a future ITS device site “B” as described in the deployment plan, then the Contractor shall install the eighty (80) foot high antenna and associated mounting support in this project.

For the purposes of this preliminary communications path analysis, the assumption was made that the maximum tree canopy height along any given link is sixty (60) feet. For each of the wireless paths in the table, the table shows the clearance available above this assumed sixty (60) foot high tree canopy. If this number is zero or greater, than the wireless link has a clear line of sight (LOS). However, it is also necessary that an additional clearance amount be available to account for the Fresnel zone effect, or the widening of the radio beam as it propagates through space. The additional clearance needed is equal to sixty (60) percent of the first Fresnel zone, which is shown in the table for each link. Thus, if the clearance above assumed tree canopy figure is greater than or equal to the “60% of first Fresnel Zone” figure, then the associated wireless link is viable. In all but six of the links in the table, this is the case. In the six exception cases, it was determined through visual observation that the actual tree canopy height is less than sixty (60) feet in the areas of concern, thus these six links were also deemed to be viable.

As mentioned above, there are a number of sites included in Table 1 that are already existing in part or in whole. It is the Department’s desire to connect these existing sites to the wireless communications system that will be constructed in this project. For many of these existing sites, the challenge will be to construct an antenna at an acceptable mounting height that will meet the LOS and up time requirements. It is expected that several of these sites may require a new support pole to mount the antenna at the required height. As part of the Contractor’s system design, these sites will require special attention. A case-by-case evaluation of these existing sites follows:

RWIS FEET 2.3\_M: The existing RWIS is mounted to an overhead sign structure. The proposed LOS is affected by the assumed tree canopy. Analysis suggests an assumed antenna mounting height of 40 feet is required. Contractor shall verify: if LOS is obstructed, will this site require a new pole for the antenna?

RWIS/CCTV FEET 8.0\_S: The existing RWIS pole is less than 35 feet tall. The proposed LOS is affected by the assumed tree canopy. Analysis suggests an assumed antenna mounting height of 70 feet is required. Contractor shall verify: if LOS is obstructed, will this site require a new pole for the antenna or could a repeater reduce the required mounting height?

DMS FEET 8.6\_S: Analysis suggests this site will work with an assumed antenna mounting height of 40 feet is required. Contractor shall verify and determine the most effective method of achieving the required antenna mounting height, noting that the site is a portable changeable message sign (PCMS) and is subject to relocation.

DMS 101 53.4\_E: The proposed LOS is affected by the assumed tree canopy; however, a field review of the expected wireless path suggests that the tree canopy assumption may be too conservative for this location. Analysis suggests an assumed antenna mounting height of 40

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feet is required. Contractor shall verify and determine the most effective method of achieving the required antenna mounting height for this ground mounted DMS.

DMS 293 8.8\_N: The proposed LOS is affected by the existing site's low elevation and surrounding tree canopy. Analysis suggests the most likely wireless connection would still require an assumed antenna mounting height of 80 feet. Contractor shall verify: if LOS is obstructed, will this site require the evaluation of alternative wireless paths to other feasible candidate sites or the incorporation of repeater sites?

RWIS/CCTV 293 10.4\_N: The existing RWIS pole is about 35 feet tall. The proposed LOS is affected by the assumed tree canopy. Analysis suggests an assumed antenna mounting height of 85 feet is required, or 40 feet if an active repeater site is located at the Amoskeag Bridge. Contractor shall verify and determine the most effective method of achieving the required antenna mounting height.

DMS 93 32.4\_S: Analysis suggests this site will work with an assumed antenna mounting height of 40 feet. Contractor shall verify and determine the most effective method of achieving the required antenna mounting height, noting that the site is a PCMS and is subject to relocation.

RWIS/CCTV 93 34.8\_N: The existing RWIS and CCTV are mounted to an overhead sign structure. The proposed LOS is affected by the assumed tree canopy. Analysis suggests an assumed antenna mounting height of 40 feet is required. Contractor shall verify: if LOS is obstructed, will this site require a new pole for the antenna?

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**Table 1. Communications Path Evaluation**

FROM		TO		Link Type (1)	Link Length, Mi.	Clearance Above Assumed Tree Canopy, Ft. (2)	60% of First Fresnel Zone, Ft. (3)
Device ID	Assumed Antenna Mounting Height, Ft.	Device ID	Assumed Antenna Mounting Height, Ft.				
FCC 1012123 tower	120	FCC 1232306 tower	100	WBH	6.4	110	-
FCC 1232306 tower	100	FCC 1060729 tower	100	WBH	8.2	15	-
FCC 1060729 tower	100	CCTV, MVDS 293 11.2N	90	WBH	7.3	30	-
FCC 1012123 tower	120	CCTV, MVDS FEET 1.3_N	80	WA	1.7	0	13
CCTV, MVDS FEET 1.3_N	80	CCTV, MVDS 0.5_S	80	WA	0.8	-10	9
FCC 1012123 tower	120	RWIS FEET 2.3_M (Exist.)	40	WA	0.7	-6	8
FCC 1012123 tower	120	DMS, MVDS FEET 3.8_S	60	WA	1.3	40	11
FCC 1012123 tower	120	CCTV, MVDS FEET 4.8_S	60	WA	2.0	65	14
FCC 1012123 tower	120	CCTV, MVDS FEET 6.2_S	60	WA	2.8	65	16
FCC 1232306 tower	100	RWIS, CCTV FEET 8.0_S (Exist.)	70	WA	2.4	6	15
FCC 1232306 tower	100	DMS FEET 8.6_S (Exist.)	40	WA	1.8	-20	13
FCC 1060729 tower	100	CCTV 293 3.4_E	60	WA	0.2	40	4
FCC 1060729 tower	100	DMS 101 53.4_E (Exist.)	40	WA	1.0	-25	10
FCC 1060729 tower	100	CCTV, DMS, MVDS 293 4.7_S	80	WA	1.6	57	12
CCTV, DMS, MVDS 293 4.7_S	80	CCTV, MVDS 293 6.1_N	80	WA	1.3	-20	11
CCTV, DMS, MVDS 293 4.7_S	80	CCTV, MVDS 293 6.8_S	90	WA	2.1	17	14
CCTV, MVDS 293 6.8_S	90	CCTV 293 7.5_N	60	WA	0.6	23	8
CCTV, MVDS 293 6.8_S	90	CCTV, RWIS 10.4_N (Exist.)	40	WA	3.1	23	17
CCTV, MVDS 293 11.2N	90	DMS 293 8.8_N (Exist.)	80	WA	2.2	-15	14
I-93 Fiber Backhaul (Dark)	N/A	CCTV, MVDS 93 26.9_N	N/A	F	N/A	N/A	N/A
CCTV, MVDS 93 26.9_N	80	CCTV 93 28.4_N	80	WA	1.6	39	12
CCTV, MVDS 93 26.9_N	80	CCTV 93 28.9_S	80	WA	2.1	17	14
I-93 Fiber Backhaul (Exist.)	N/A	DMS, CCTV, MVDS 93 27.8_S (Exist.)	N/A	F	N/A	N/A	N/A
I-93 Fiber Backhaul (Dark)	N/A	CCTV, MVDS 93 31.7_N	N/A	F	N/A	N/A	N/A
I-93 Fiber Backhaul (Dark)	N/A	CCTV, MVDS 93 33.0_N	N/A	F	N/A	N/A	N/A
CCTV, MVDS 93 33.0_N	90	DMS 93 32.4_S (Exist.)	40	WA	0.6	11	8
CCTV, MVDS 93 33.0_N	N/A	DMS 93 32.9_N	N/A	F	N/A	N/A	N/A
I-93 Fiber Backhaul (Exist.)	N/A	CCTV, MVDS 93 35.4_S (Exist.)	N/A	F	N/A	N/A	N/A
CCTV, MVDS 93 35.4_S (Exist.)	90	DMS 93 36.5_S	60	WA	0.9	26	9
I-93 Fiber Backhaul	N/A	DMS, CCTV, MVDS 93 36.8_N	N/A	F	N/A	N/A	N/A
DMS, CCTV, MVDS 93 36.8_N	80	RWIS, CCTV 93 34.8_N (Exist.)	40	WA	1.4	2	12
DMS, CCTV, MVDS 93 36.8_N	80	CCTV, MVDS 93 37.2_S	60	WA	0.4	13	6

(1) Link type: F = fiber; WA = wireless access; WBH = wireless backhaul.

(2) Tree canopy is assumed to be 60 feet, maximum, throughout the project. Where clearance value is less than fresnel zone value, tree canopy was observed to be less than 60 feet. Clearance shown is the expected minimum value along the link.

(3) Where shown, the Fresnel zone is calculated at 4.9 Ghz. It is not shown for wireless backbone links, because the Contractor shall determine the wireless frequency based on the data capacity required.

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**APPENDIX H: FEET CORRIDOR EXISTING ITS DEVICES –  
AVAILABLE INFORMATION**

Available information on the existing ITS devices, including the existing fiber optic network along I-93, will be made available on-line for Contractor use.